

# THE ARCHITECT & BUILDING NEWS

3 NOVEMBER 1955 · VOL. 208 · NO. 18 · ONE SHILLING WEEKLY

- OFFICES PLASTICS DIVISION, I.C.I.
- WOODLANDS SCHOOL, COVENTRY
- CURRENT MEASURED RATES

PUBLISHED IN LONDON SINCE 1854

**BRADY  
SHUTTERS****ROLLING  
DOORS****SHUTTER THE WORLD**

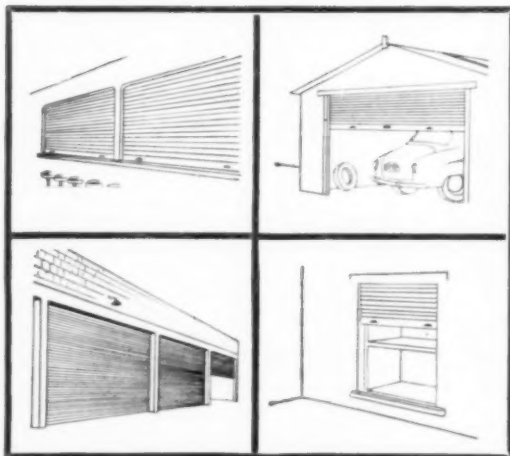
## ...on both land and sea

The "Princess of Vancouver", one of the most modern ferry boats in the World, recently built on the Clyde, has Brady electrically-operated Rolling Doors fitted, to the Car and Rail entrance for added safety, fast and easy operation and to save space.

These three qualities, plus greater strength, better appearance and absolute reliability, have made Brady products famous throughout the World—in factories, hotels, garages, bus depots, railway yards, vehicles, etc.

There is a Brady Rolling Door, hand or electrically operated, suitable for the project you are engaged upon. Full details, and free descriptive literature—write to the addresses below.

*The doors commanding the world's largest sale.*



## G. BRADY & COMPANY LIMITED MANCHESTER 4


Telephone COLlyhurst 2797/8. London: New Islington Works, Park Royal N.W.10  
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(G. Brady & Co. Canada Ltd.) 1405 Bishop Street, Montreal 25, Que. and also at 23 Scott  
Street, Toronto 1. U.S.A.: G. Brady & Co. Ltd., 11 West 42nd St. New York 18 N.Y.  
Norway: An Thorbjørnsen, Kongensgate, 14, Oslo and also at Cape Town.



*we shutter the world*

**MANUFACTURERS OF BRADY HAND AND POWER OPERATED LIFTS**

S & B



If the specification calls for **ASPHALT**

**TANKING**

**FLOORING**

**ROOFING**

the specialists are .... **PERMANITE LTD**  
LONDON · BIRMINGHAM · MANCHESTER

**WOOD — nature's best building material**

# CANADIAN RED PINE

**a wood remarkable for its versatility...  
at once structurally strong and  
beautifully grained.**



## TYPICAL USES

*Interior decoration,  
panelling, stairs, floors,  
exposed beams, mould-  
ings, trims, cupboards,  
built-in furniture*

*Exterior siding, doors,  
windows and trim*

*Structural timbers*

*Railway wagons, flour  
and grain-milling equip-  
ment, agricultural imple-  
ments*

*Boxes and crates, tanks  
and silos*

*Telephone poles and  
piling (treated)*

## SPECIAL ADVANTAGES

*Warm straight grain,  
firm red knots*

*Easy to work, holds  
screws and nails well,  
takes good finish*

*Low shrinkage and di-  
mension stability*

*Particularly suitable for  
load-bearing members  
in house, commercial and  
industrial construction*

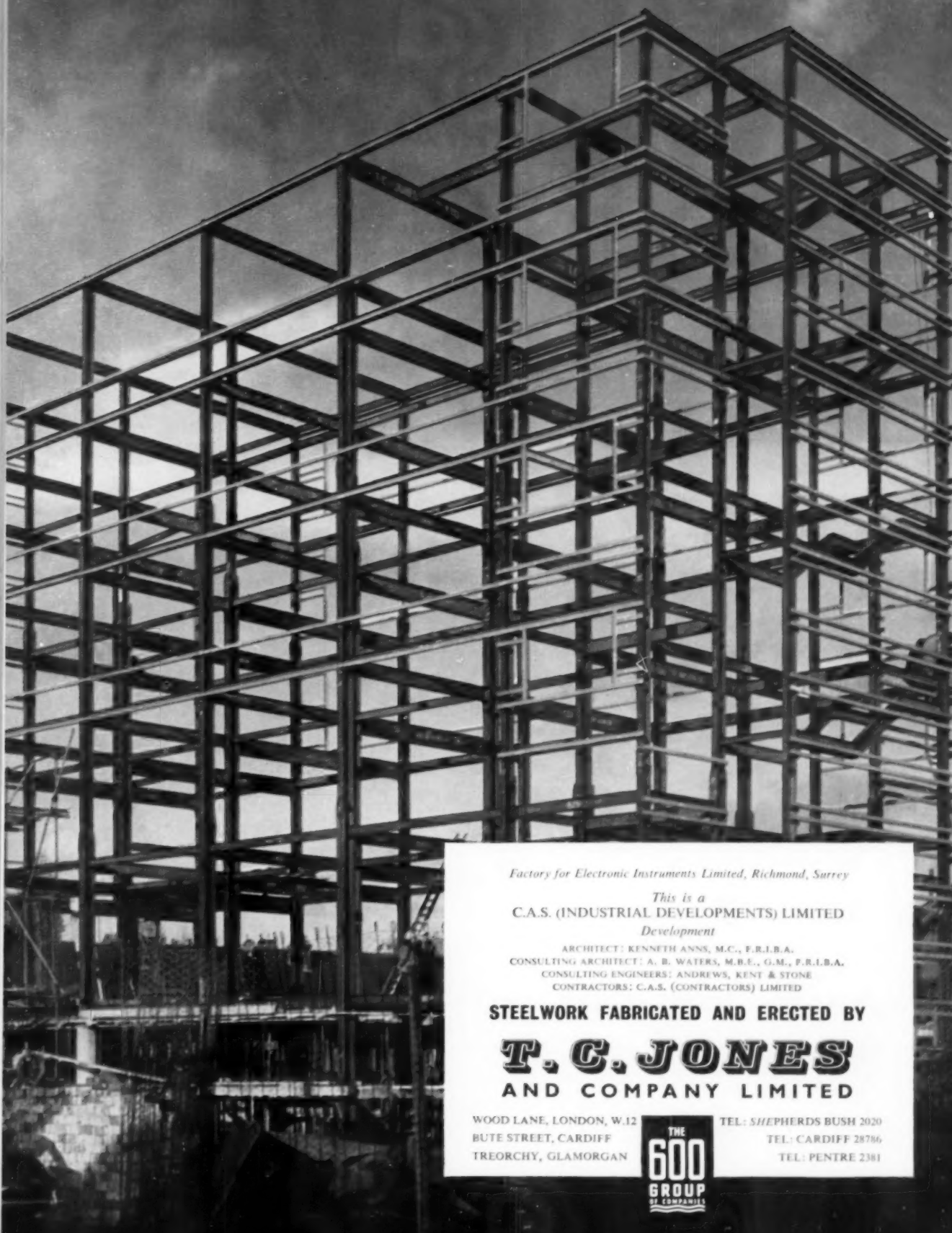
*Seasons remarkably well  
without accompanying  
seasoning defects*

**FOR FURTHER INFORMATION**  
concerning Canadian woods contact The  
Commercial Secretary (Timber),  
Canada House, Trafalgar Square,  
London, S.W.1.

**Reproduced here is figure of Canadian Red Pine**

**This advertisement is one of a series featuring Canadian Douglas Fir, Spruce,  
White Pine, Pacific Coast Hemlock and Western Red Cedar**

**TIM 3**



*Factory for Electronic Instruments Limited, Richmond, Surrey*

*This is a*  
**C.A.S. (INDUSTRIAL DEVELOPMENTS) LIMITED**  
*Development*

ARCHITECT: KENNETH ANNS, M.C., F.R.I.B.A.  
CONSULTING ARCHITECT: A. B. WATERS, M.B.E., G.M., F.R.I.B.A.  
CONSULTING ENGINEERS: ANDREWS, KENT & STONE  
CONTRACTORS: C.A.S. (CONTRACTORS) LIMITED

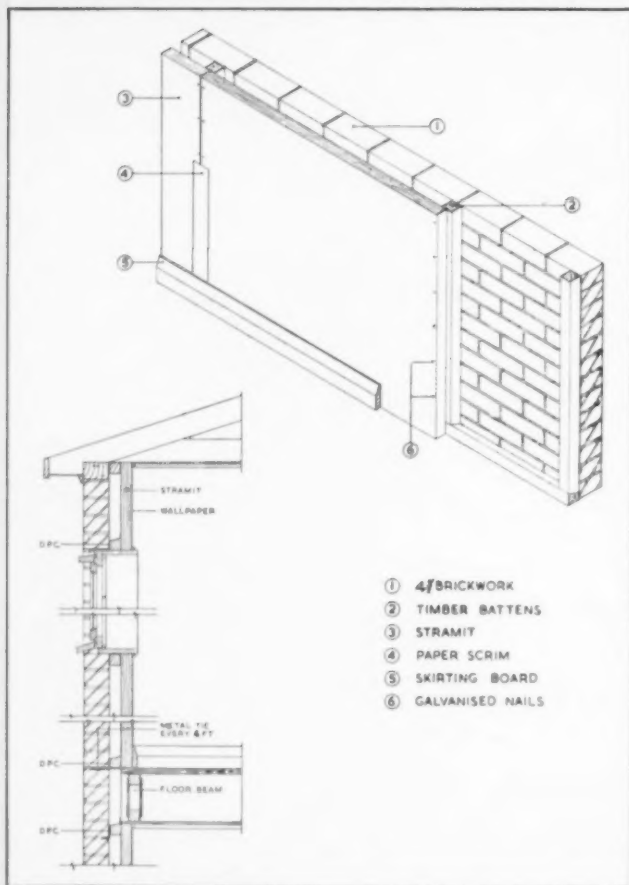
**STEELWORK FABRICATED AND ERECTED BY**

**T. C. JONES**  
**AND COMPANY LIMITED**

WOOD LANE, LONDON, W.12  
BUTE STREET, CARDIFF  
TREORCHY, GLAMORGAN



TEL: SHEPHERDS BUSH 2020  
TEL: CARDIFF 28786  
TEL: PENTRE 2381



- ① 4" BRICKWORK
- ② TIMBER BATTENS
- ③ STRAMIT
- ④ PAPER SCRIM
- ⑤ SKIRTING BOARD
- ⑥ GALVANISED NAILS

# STRAMIT

## 2" BUILDING SLABS

# AND U

—the measure of heat-loss through a construction, in B.Th.U.'s. per hour over one square foot of its area, when the temperature-difference between its two sides is 1° F.

With domestic coal busily climbing the price ladder and growing ever more unpopular in the eyes of health authorities, the insulation of private houses has today taken on a new importance.

At the same time, the standards of comfort currently demanded in the average home are higher than before. Budgets are tighter.

Faced by this challenge, architects are everywhere engaged in experimenting with new, novel and intensely practical forms of construction. For instance, the use of cross-walls which take the load and thereby permit fresh scope for lightness and elegance of design on the outer faces of the building. Our illustration shows an example of this construction. The outer skin depicted here is of brick, but it can just as readily be of a less traditional material—and the fact that the "U" figure for the walling illustrated is no greater than 0.16 is surely a remarkable testimony to the thermal efficiency of Stramit.

## STRAMIT CUTS THE COST OF COMFORT

No other building slab  
possesses

ALL these properties

Stramit combines light weight with great strength and rigidity. ★ It has a good fire-resistance classification and a high degree of sound-absorption. ★ It will take oil paint, emulsion paint, distemper and similar finishes without special preparation. ★ It is pre-cut to size to save time on site and to avoid cutting to waste. ★ It provides an excellent roof deck and is ideal for lagging cold-water cisterns.

2 in. Thick; 4 ft. Wide; any length (Stock lengths:— 8, 9, 10 & 12 ft.) Available from stock through leading merchants.

Send NOW for your copy of our fully detailed TECHNICAL FOLDER (ABN 955) and Building Research Station Reports

## Be it windows or locos —

### Geoff Cooper's the expert

Most top-level business men relax with a Peter Cheyney or their chrysanthemums or an XK-120. But not Mr. Cooper,\* Williams & Williams divisional manager for Crawley, Maidstone, Hertford, Southampton, Norwich and Reading offices. When he can take his thoughts off Windows and Wallspan he switches them to—Engines. Railway engines are Geoff Cooper's pastime and he has a deep and authoritative knowledge about their history, types and internal machinery. Surprising? Not really. A mind that can talk imaginatively and technically to architects and engineers quite naturally responds to the thundering beauty of a speeding loco—and quite naturally wants to know

how it works. Geoff Cooper is a first-class metal window man. You'll like him.

\* Mr. G. M. Cooper supervises offices in Reading (50291), Crawley (2200), Hertford (3969), Maidstone (51750), Norwich (24393), Southampton (26252).

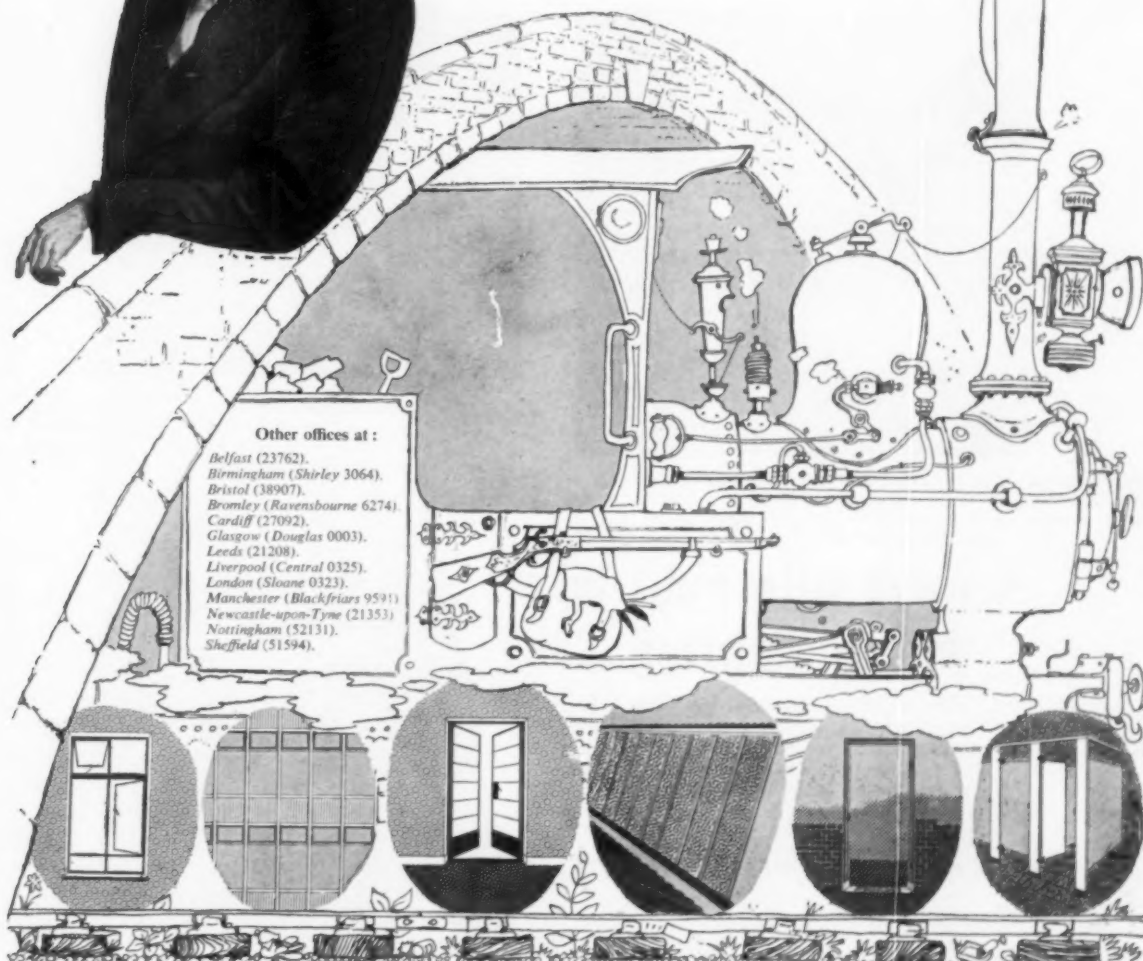
**METAL WINDOWS**

**WILLIAMS & WILLIAMS**



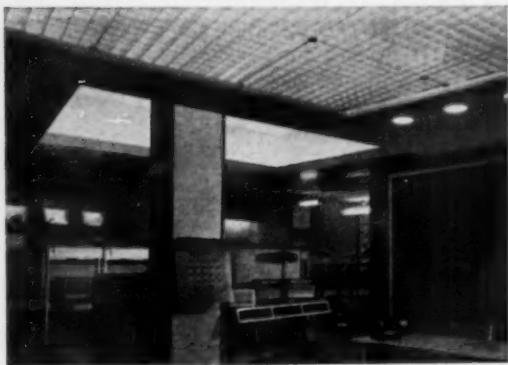
#### Other offices at:

Belfast (23762).  
Birmingham (Shirley 3064).  
Bristol (38907).  
Bromley (Ravensbourne 6274).  
Cardiff (27092).  
Glasgow (Douglas 0003).  
Leeds (21208).  
Liverpool (Central 0325).  
London (Sloane 0323).  
Manchester (Blackfriars 9591).  
Newcastle-upon-Tyne (21353).  
Nottingham (52131).  
Sheffield (51594).



METAL WINDOWS • WALLSPAN CURTAIN WALLING • DOORS • ALUMINEX • METAL DOOR FRAMES • ROFTEN TOILET CUBICLES

**Atlas "Louverall"** Luminous ceiling areas of remarkable consistency are obtained by means of the Atlas "Louverall" system. It is designed to provide flexible lighting suitable for any architectural style. Its standard anodised aluminium panels are 33" x 33" x 3".



**Luminated Ceiling.** Completely luminous ceilings can be erected quickly and easily by supporting this corrugated vinyl sheeting on lightweight steel frames. The system is ideal for the economical illumination of large ceiling areas with high levels of efficiently diffused lighting.



**Atlas "Louverene."** Standard 8" x 2" louverene sections in clear plastic can quickly be assembled on site into complete ceiling panels combining efficient light diffusion with pleasing appearance.



**Atlas Louverex.** This white opal plastic louvred ceiling can be made up from standard 5 1/4" square sections to any size or shape. It is light in weight and effectively shields the light source from view.

## 4 ways with built-in ceiling lighting

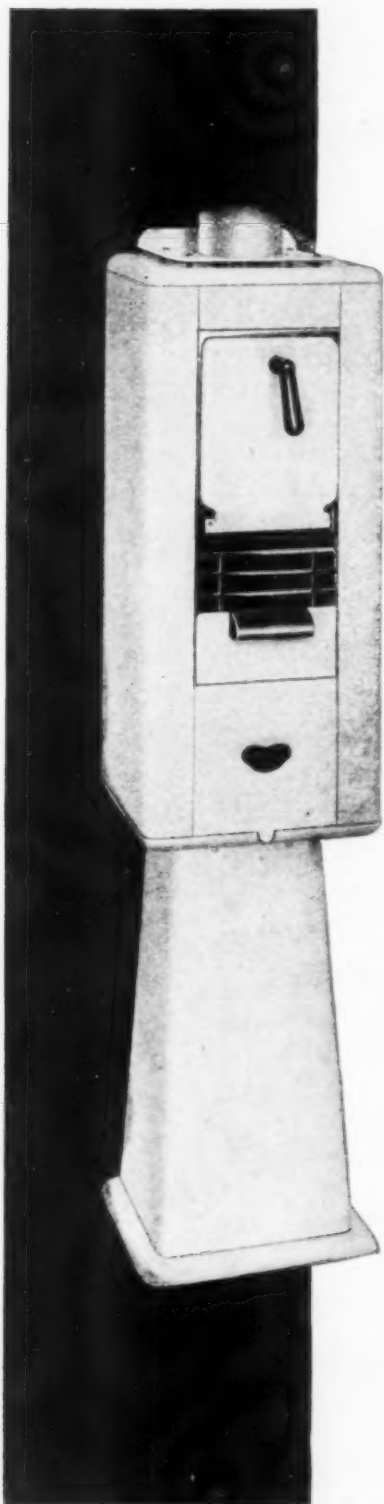
Built-in ceiling lighting has enormously wide applications today. Accordingly Atlas present four excellent systems all of which mark great progress towards simplification and standardization of form.

... for Architects—by **ATLAS**

ATLAS LIGHTING DIVISION, THORN ELECTRICAL INDUSTRIES LTD.

233 SHAFTESBURY AVENUE, LONDON W.C.2.





*Safeguard  
Public Health  
Encourage  
Personal Hygiene*

in FACTORIES • HOSPITALS • CLINICS  
SCHOOLS • HOTELS AND OFFICES

Investment by British industrialists and others in modern equipment to safeguard the health and welfare of the vast and growing numbers of workers, has proved beyond doubt the wisdom of a policy both far seeing and democratic in concept.

The installation of Sugg's incinerators wherever women employees form part of an organisation is plain commonsense.

Our sales and technical staff will be glad to advise and co-operate.

*The Sugg  
Incinerator*

Gas-Fired

WILLIAM SUGG & CO. LIMITED

(Incorporating Cowper Penfold & Co. Ltd.)

VINCENT WORKS, REGENCY ST., LONDON, S.W.1. Tel: VIC 3211



# FROM THE SNOWCEM FILES:—

Crusader Insurance Company Ltd.  
Reigate, Surrey



Owners: Crusader Insurance Company Ltd., Reigate, Surrey.

Architect: Alister MacDonald, F.R.I.B.A.  
Contractor: House & Tester, Salford, Surrey.

The Snowcem treated walls of this new extension to the Crusader Insurance Company's building provide a colourful feature in a delightful setting.  
SNOWCEM is easily applied to concrete, cement rendering or suitable brickwork by brush or spray. Available in seven colours: White, Cream, Mid Cream, Buff, Pink, Silver Grey and Pale Green.

## SNOWCEM



WATERPROOF CEMENT PAINT  
Decoration PLUS protection at LOW cost

★ BRITISH CEMENT IS THE CHEAPEST IN THE WORLD

This water...  
does not brush, peel or flake off.

THE CEMENT MARKETING COMPANY LIMITED  
Portland House, Tothill Street, London, S.W.1  
or G. & T. EARLE LTD., HULL  
THE SOUTH WALES PORTLAND CEMENT & LIME CO. LTD.,  
Penarth, Glam.



*Photo by courtesy of  
Ford Motor Company Ltd.*

## *They chose WOOD floors*

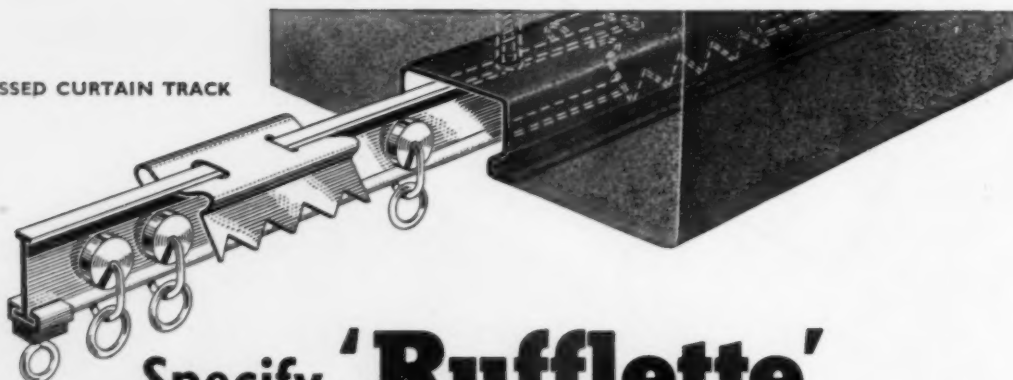
- ★ A good hardwood floor stands up to a lifetime of hard wear.
- ★ It is quiet, warm and comfortable underfoot.
- ★ It is a pleasure to look at.
- ★ It can be cheaply and easily maintained in perfect condition.
- ★ It has unique qualities which make it especially suitable for  
Motor Showrooms.

*There's nothing like*



ISSUED BY THE TIMBER DEVELOPMENT ASSOCIATION LIMITED, 21 COLLEGE HILL, LONDON, E.C.4, AND BRANCHES THROUGHOUT THE COUNTRY  
IN CONJUNCTION WITH THE HARDWOOD FLOORING MANUFACTURERS' ASSOCIATION

RECESSED CURTAIN TRACK

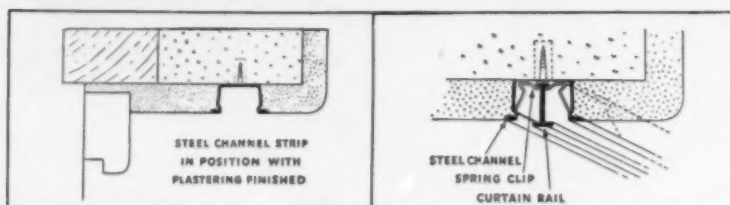


## Specify 'Rufflette' (Pat. & Regd.) BRAND CURTAIN TRACK SYSTEMS

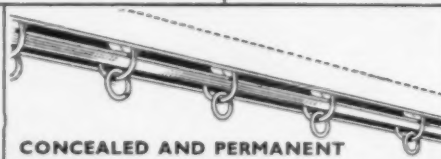
\* SEE OUR PERMANENT EXHIBITS

AT THE BUILDING CENTRE IN LONDON & GLASGOW

"Rufflette" Brand Recessed Curtain Track represents the perfect method of curtain suspension, being concealed, permanent and inexpensive. It is an integral part of the structure and can be fitted into wood or plaster lintels. The track is locked in position by a patent spring clip without screws. Many architects specify this product in new buildings.

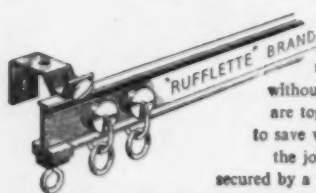


"Rufflette" Brand Tracks have been installed by many local authorities including Ilford, Wandsworth, Lewisham, Willesden, Finchley, Wood Green, Poplar, Wimbledon, Greenwich, Stoke Newington, Islington, Holborn, Leyton & West Ham Borough Councils. Also London, Bucks, Surrey, Middlesex & Essex County Councils.



CONCEALED AND PERMANENT

Cubicle Track installations have been made for many hospitals including Edgware Gen., Mount Vernon, Richmond, Bushey Maternity, Northwood & Pinner Gen., Liverpool Stanley, East Suffolk & Ipswich, Southmead Bristol, Newcastle Gen., Darlington, Warrington Infy., and the Liverpool Royal Infy., and also for many municipal undertakings.

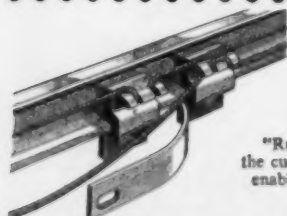
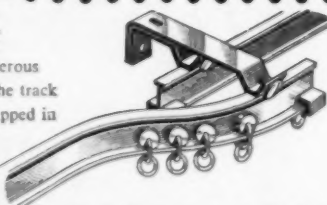


R/L TYPE TRACK

A strong track for all types of window, with or without cord control. Brackets are top or face fixing, designed to save valuable time and cost on the job, the track being rigidly secured by a single front-facing screw.

OVERLAP BRACKET

In order to give a generous overlap for curtains, the track can be cut and over-lapped in the centre, using the special BL7 bracket.

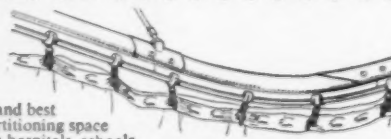


CORD CONTROL

On straight track, curtains can be effortlessly opened and closed with this "Rufflette" Cord Control. Note the curved travelling section which enables curtains to be overlapped without cutting the track.

CUBICLE TRACK

The simplest and best method of partitioning space by curtains, in hospitals, schools, hairdressing establishments, clinics and stores. Suspension is from ceiling or wall and silent runners make the operation of curtains almost inaudible.



FULLY ILLUSTRATED CATALOGUE WILL BE SENT ON REQUEST TO:—

**THOMAS FRENCH & SONS LTD. HEAD OFFICE: CHESTER RD, MANCHESTER, 15.**  
Also at Wythenshawe and London, Associate Company in U.S.A.



**I.C.I. LTD. PLASTICS DIVISION**  
**OFFICE BLOCK 'A' WELWYN GARDEN CITY**



Architects: J. Douglass Mathews & Partners

**GENERAL CONTRACTORS**  
**WELWYN BUILDERS LTD.**

"The Builders" of Welwyn Garden City

**BRIDGE ROAD**  
**WELWYN GARDEN CITY**  
**HERTS**

Telephone: Welwyn Garden 4545

---

► All joints in duct, junction boxes and accessories are secured by driven taper pins ensuring positive earth continuity.

► Conduits may be connected to each duct within the floor screed and also to the corners of the junction boxes.

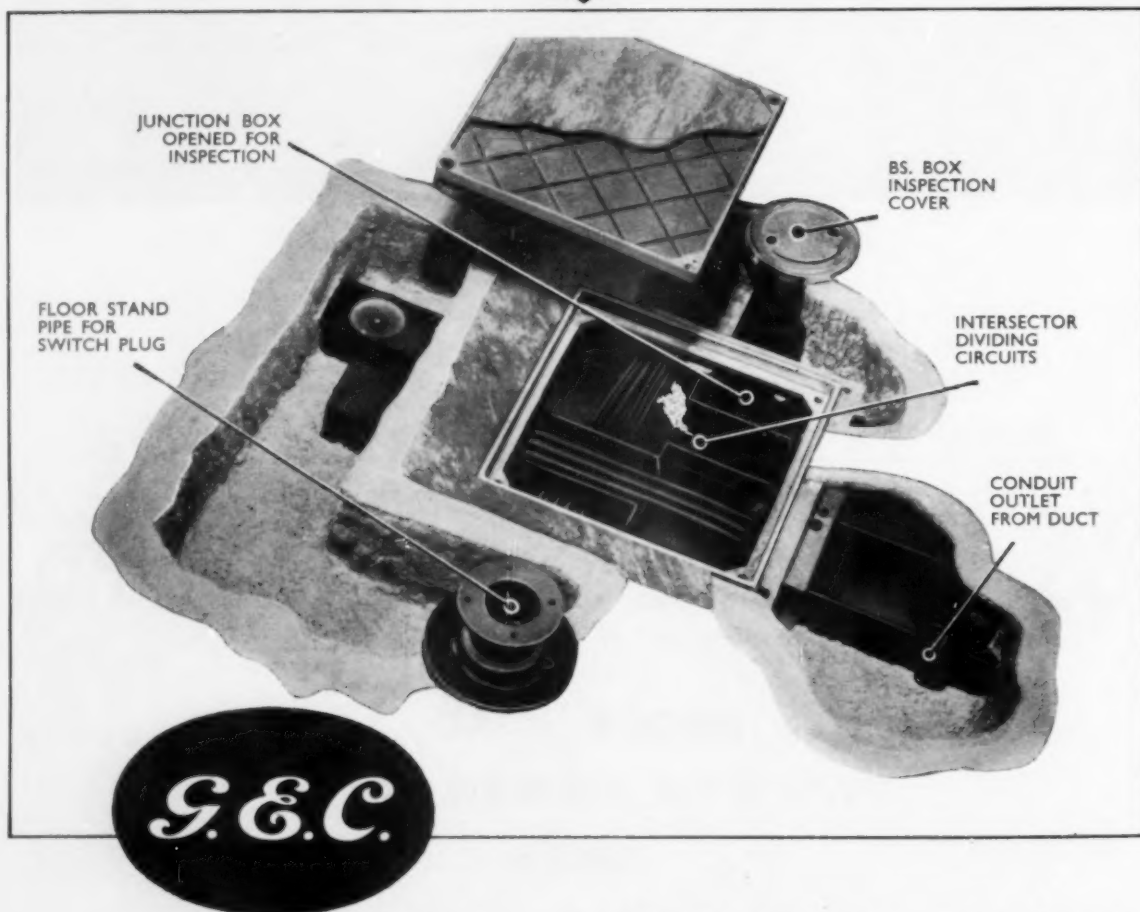
► Junction boxes are available in one, two, three or four-way types according to requirements.

► The minimum depths of the junction boxes from finished floor level to base are as follows:—

2½ in = 2½ in x 1½ in duct

2½ in = 2 in x 1½ in „

The most modern method of distribution for electrical services in offices and commercial buildings is the G.E.C. under-floor metal duct system. This system has been developed after long experience and collaboration with architects, consultants and contractors. The whole system can be planned in advance and provides complete flexibility, mechanical strength and earth continuity.



## under-floor metal duct system

THE GENERAL ELECTRIC CO. LTD., MAGNET HOUSE, KINGSWAY, LONDON, W.C.2



**'QUALITY' JOINERY**

AT

**STAND  
Nº 330**

**ROW 'R'**

THE BUILDING  
EXHIBITION  
O L Y M P I A



**JOHN SADD & SONS LIMITED**

LONDON OFFICE: ALDWYCH HOUSE,  
W.C.2. Telephone: CHAncery 7214

**MALDON, ESSEX**  
TELEPHONE MALDON 131

**FLUSH DOORS**

**WOOD WINDOWS**

**KITCHEN UNITS**

STAIRCASES  
PANEL DOORS  
JOINERY TO  
DETAIL

**To take an even bigger  
load off your mind**

We have extended the range of the Potterton No. 1 Series "Rex" and "D" Series "Rex" to include 8 section boilers. These boilers have the following ratings.

**THESE  
HIGHER RATINGS  
AT LOWER  
COSTS**

BOILER	HP/HP	RADIATION (unobstructed sq. ft.)
18 28	34,000 34,000	1650 sq. ft.
BOILER	HP/HP	RADIATION (unobstructed sq. ft.)
18 28	330 264	660 660

*Note: 18 is 200 B.T.U. per cu. ft.*

Their introduction is great news for the heating Engineer, since he can now make available to his client boilers of this higher capacity in more economical ranges than has hitherto been possible. They, naturally, have all the advantages of other Potterton Gas-fired Boilers.

### **Potterton Gas-fired Boilers**



THOMAS DE LA RUE & CO. LTD. (POTTERTON DIVISION)  
20/30 Buckhold Road, London S.W.18.

HIGGS <sup>AND</sup> HILL  
LIMITED

LONDON

LEEDS

COVENTRY

JAMAICA, B.W. I.

Builders of  
**WOODLANDS SCHOOL**  
Coventry

*reviewed in this issue.*

# BRABY PRESSED STEEL STAIRS

Braby Pressed Steel Stairs are suitable for internal use for all classes of buildings. They are strong, light and may be easily erected along with the structural framework to give access to the various floors during building operations.

Designs and estimates submitted on request.

The illustrations show two of the stairs supplied and erected by us at the Store of Messrs. E. Dingle & Co. Ltd., Plymouth.

ASSISTANTS: Sir John Burt, Tait & Partners,  
F.I.R.I.B.A.  
CONTRACTORS: Messrs. James Loughrey & Co. Ltd.



ONE OF THE WIDE RANGE OF

# BRABY

PRODUCTS

## FREDERICK BRABY & COMPANY LIMITED

ECLIPSE WORKS, PETERSHILL ROAD, GLASGOW, N. TELEPHONE: SPRINGBURN 5151

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OTHER OFFICES: 352-364 Edmon Road, London, N.W.1 (Head Office), TELEPHONE: EUSton 3456

110 Cannon Street, London, E.C.4 (Export), TELEPHONE: MANAion House 6034

Queen's Buildings, 10 Royal Avenue, Belfast, TELEPHONE: 26509

Palace Street, Plymouth, TELEPHONE: 62261



**HEADROW HOUSE, LEEDS**

ARCHITECT: ARTHUR S. ASH, F.R.I.B.A.

Stonework executed in **Empire Stone**

**Empire Stone Company Limited**

THANET HOUSE, 231 STRAND, LONDON W.C.2

BERKELEY HOUSE, BIRMINGHAM 16

NARBOROUGH, NR. LEICESTER

324 DEANS GATE, MANCHESTER 3

# Scheme for better cooking



Specialist attention, based on the most up-to-date knowledge of all aspects of large scale cooking, is freely available through the Radiation service to architects. All we ask is to be called in at the earliest possible moment, as special equipment may be needed, or unusual arrangements for services, drainage and ventilation required.

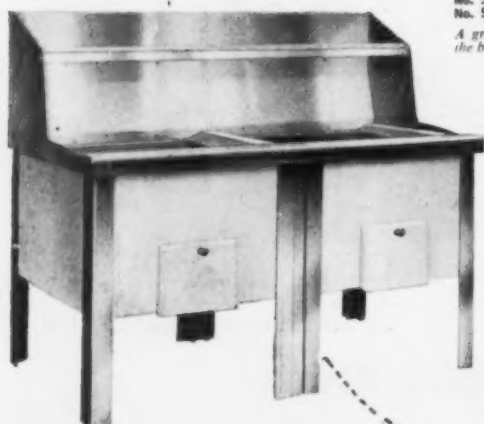
The **STRATFORD RANGE** is designed on the unit principle to permit of wall or central pattern suites being built up to meet requirements.

The oven is **REGULO** controlled; large, medium and small boiling burners are included in the hotplate, and being in vitreous enamel finish, the whole is easy to clean.

The two different Models of the **STRATFORD RANGE** have these overall dimensions:

	Width	Height	Depth
No. 5127	27"	36"	31 1/4"
No. 5136	36"	36"	31 1/4"

A grill can be supplied instead of some of the boiling burners at a small extra cost.



The **KINGFISHER FRYER** for deep fat frying is constructed on the unit principle and so is easy to install singly or in any number. Units are available with pans 24" or 18" wide. The fat temperature in either model is thermostatically controlled.

Finish includes vitreous enamel and stainless steel.

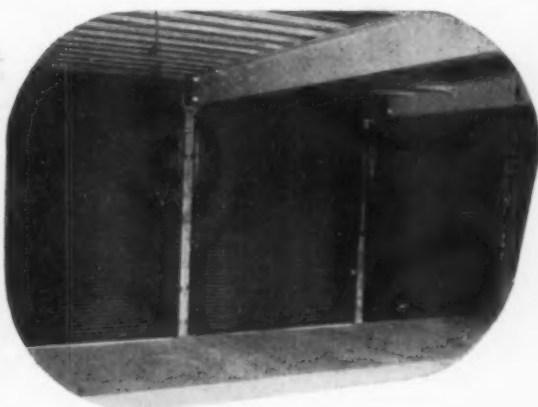
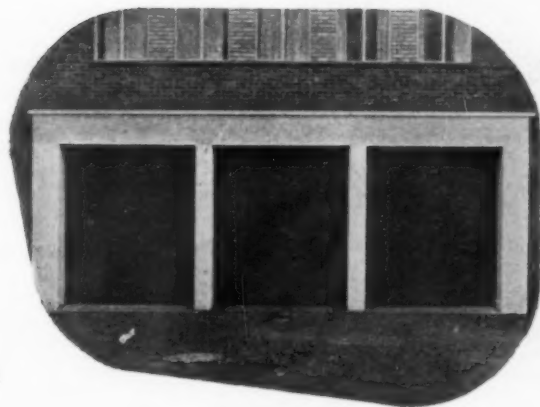


*Please consult us on all large cooking problems*



For a fully descriptive leaflet, write to Dept. L.C.B., 7 Stratford Place, London, W.1. MAYfair 6462.

## ADAM SHUTTER INSTALLATION



*Photographs by kind permission of Messrs. Sparrow & Clatter. A/A.R.I.B.A.: Architects.*

STEEL ● ALUMINIUM ● SOFT & HARD WOOD

*Hand operated by long arm. Hand operated by chain and gearing  
or motorised*

*An efficient service in design, manufacture, fixing and repair*

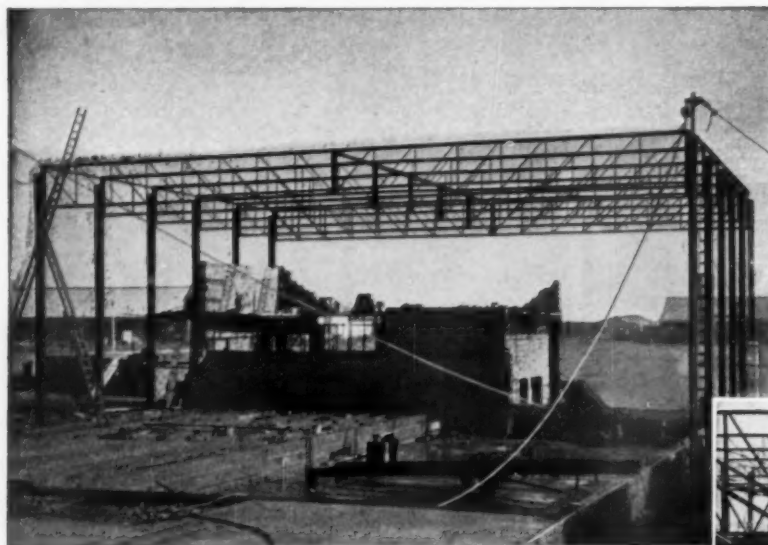
### ADAM LTD

---

BLIND & SHUTTER DIVISION of ADAM & LANE & NEEVE LTD.

Falcon Works, Copperfield Road, London, E.3. Tel. ADVance 2345 (6 lines)

# HOTCHKISS LATTICE CONSTRUCTION



52ft. lattice girders at a Portsmouth factory. Architects: Thomas Jolly & Grant.  
Contractors: John Hunt Ltd.

## HOTCHKISS ENGINEERS LTD.

EASTBOURNE AND SHOREHAM SUSSEX

ESTABLISHED 1885

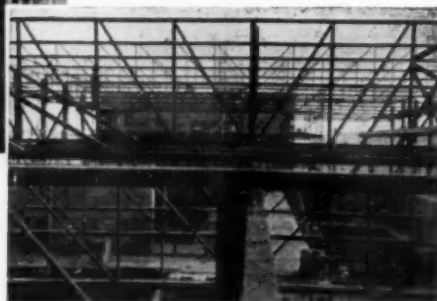
HEAD OFFICE: 33, TERMINUS PLACE, EASTBOURNE. TEL. 2424 (4 LINES)

Hotchkiss Lattice Construction is being used for new schools, churches, factories, halls and many other buildings to the requirements of County Councils, Borough Councils and many leading architects.

The system is entirely flexible in application and suitable for all types of covering materials.

Your specific enquiries are invited. Our design services are free and it is most advantageous to call us in at an early stage.

Catalogue No. LG9 is available upon request.



IT'S A  
**SOUND**  
PROPOSITION SIR!

In fact J & B Acoustic correction is an INVESTMENT because noise reduction in industrial buildings increases the efficiency of employees. Quiet and privacy in flats, offices and homes improves health; and the effective thermal insulation saves fuel as well.

J & B Mineral Wool Insulation is easy and safe to handle and install. Versatile and prefabricated in many forms it can be adapted or moulded to suit highly specialised applications.

We believe an estimate would convince you of the economies of J & B Mineral Wool Insulation.

A convincing offer for a sound proposition.

**J & B**

## MINERAL WOOL

*remains the perfect insulant*

Our Advisory Department (S-) will welcome your enquiries without obligation.

**FIREPROOF. MOULD-PROOF. NON-CORROSIVE. WATER REPELLENT. ECONOMICAL. NON-SETTLING. INORGANIC.**

**JONES & BROADBENT LTD.** PERREN ST. LONDON, N.W.5 Telephone: GULLiver 2120, 5548-9  
And at BILLINGHAM-ON-TEES, SOUTH BANK (YORKS), BRISTOL, BURTON-ON-TRENT, LIVERPOOL AND MANCHESTER.

# THE ARCHITECT & BUILDING NEWS

3 November, 1955

The "Architect and Building News" incorporates the "Architect," founded in 1869, and the "Building News," founded in 1854. The annual subscription, inland and overseas, is £2 15s. 0d. post paid: U.S.A. and Canada \$9.00

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Manchester: 260 Deansgate. Tel.: Blackfriars 4412 (3 lines), Deansgate 3595 (2 lines); Glasgow: 26B Renfield Street.

## RIGHTS AND DUTIES OF THE ARCHITECT

IT is an amiable characteristic of professional men that they seek to define their responsibilities to Society and, having done so, do not hesitate to publish a code of principles by which they have agreed to guide themselves. This state of affairs has long been accepted as natural in England where all the leading professions have pretty strict codes of conduct and machinery for applying sanctions against their own members for any infringement. It is by no means accepted in some other countries and in yet others the professions themselves have not yet become awake to these moral responsibilities.

The International Union of Architects was founded shortly after the last war. Its aim was to become a sort of international professional organisation for architects. Its programme was ambitious, embracing not only the study and co-ordination of matters architectural but also the co-ordination and codification of professional ethics and professional practice. There are some who think that its structure and resources are too slender to support the burden of such a wide programme. There are weaknesses. The initiative for the foundation of the International Union came largely from France and it was natural, therefore, that the French had a considerable say in drawing up the constitution. It is here that one of the major weaknesses is revealed. The French have a great sense of logic and formalism. Membership of the Union was cast on a corporate national basis, the architectural profession in each member country as a whole forming the national section. This scheme served well in those countries with organised professions and powerful representative professional institutions; but in other countries where the professions were less organised it has fallen to a few enthusiastic individuals to erect a façade behind which there lies virtually no organisation.

In the eight years of its existence the International Union has held four congresses and has brought to completion through committee work two major matters. It has finally reconciled a number of points of conflict in regard to standard regulations for international competitions in architecture and town planning and has

persuaded U.N.E.S.C.O. to sponsor these regulations and enlist the official support of the governments of the member nations of U.N.E.S.C.O.

The second major work is the production of the document—which is appended to this article—entitled "Rights and Duties of the Architect". To a casual reader it may appear a little thin and may be regarded as a rather small mouse for the I.U.A. mountain to have produced, but there were immense difficulties in the diversity of custom and practice and of ethical outlook in the various member countries, and there were even serious difficulties in shades of meaning when words were translated from one language to another. The definitive text of official documents is French and the original title was "Le Statut de l'Architecte". This immediately raised a difficulty in the minds of the English and Americans since the word "statute" has a definite significance amounting almost to the force of law. As an alternative the title "Droits et Devoirs" was proposed and was generally accepted by others than the Russians who said that in Russian "statute" did not have any great force whereas "Rights and Duties" had the force of compulsion. As it was never intended that the document should be regarded in each country as over-riding any code of conduct already in force the weaker title was thought better and remains "Rights and Duties" for the West and "Statute" for the East.

Again with a large number of different nationalities, the finally agreed text must inevitably be reduced to something approaching rather vague generalities—which goes far to explain the text of the Introduction and the first part of the section headed "The Architect's Place in the Community". The second part of this section seems at first sight to be a statement of what Society owes to the architect and is certainly more specific in detail. On examination, however, it is largely concerned with what Society should do to protect itself against the dangers of the unqualified technician. The last twelve paragraphs of the document comprise the code of conduct. These paragraphs are wholly unobjectionable and the guidance they give has long been

covered in this country by the codes administered by the A.R.C.U.K. and the R.I.B.A. Yet in many countries these precepts are novelties and it may be some time before the professions in those countries can be persuaded to accept them as a binding code of conduct.

A point which provoked very considerable discussion was the desire of the French Section to include some provision which would permit architects to act as contractors under certain circumstances. In France this is permitted to the profession for projects where the architect acts as contractor for a building of his own design. It was finally decided that any such waiver as this might be misunderstood in countries where the profession was less organised and controlled. The clause which appeared in the earlier drafts was omitted in the final version.

It was not intended by the International Union that the document should override or even conflict with any code of conduct locally in force. In countries with more stringent codes those codes prevail.

\* \* \*

## **Rights and Duties of the Architect**

### *Introduction*

The practice of architecture varies widely according to circumstances. Some architects practise as private professional men, others are to a greater or lesser extent in the service of their government or of private and public institutions, others again are responsible for the execution of their own designs.

In spite of this, it seems both possible and desirable to draw up certain rules that may be universally applicable, and in so doing, the I.U.A. hopes to demonstrate the unity of the architectural profession throughout the world through the promulgation of this charter as a step towards the complete fulfilment of its task.

### *The Architect's Place in the Community*

A. An architect is one whose mastery of the art of building as an expression of life qualifies him to create and vitalize the places where men live and work.

If he is to express the aspirations, and minister to the needs, of his age, he must have both knowledge and understanding of the human situation in its widest sense, while showing a constant regard for economic realities, and for all other relevant factors.

He should see his work as a contribution to an overall plan into which he must introduce at every level both liveliness and orderliness.

From this point of view, architecture and town planning are seen to be complementary activities.

The architect should endeavour to develop continuously in technical competence and artistic ability as well as in experience.

B. In return it is desirable that society, recognising the fundamental nature of the architect's work, should provide such legal protection as the profession needs in order to function in the proper manner.

This can be achieved either by improving existing legislation or by introducing new legislation inspired by professional ideals conformable to the aims of the I.U.A.

Such legislation should be designed to establish or to define more particularly:

- (a) The qualifications necessary for the practice of architecture.

- (b) The best means of achieving a sound architectural education and of preventing the entry into the Profession of unqualified persons.

- (c) The rules of conduct required to ensure a high moral standard for the Profession.

- (d) The penalties to be attached to such regulations.

C. Apart from legal enactments, national professional organisations should draw up such regulations as may serve to promote a spirit of comradeship. They should impose on their members a professional code based on the following general principles: each organisation being free to give them a narrower interpretation where it is thought desirable.

D. Whatever the form of his practice the architect must not lose sight of the fundamental nature of his calling. Thus through his work he will contribute to the advancement of mankind.

### *Rights and Duties*

1. The architect should place at the disposal of his client all his knowledge, experience and application in submitting proposals, in supervising works and in any help or advice he may be called upon to give.

2. He should devote himself wholeheartedly to the interests of his client in so far as they are not inconsistent with what he conceives to be his duty to his profession nor with the interests of the community as a whole.

3. The growth of an architect's practice should depend on merit; he should not be permitted to advertise nor should he ever have or acquire an improper commercial interest.

4. He should not take any action that might damage directly or indirectly a fellow architect; he should try to remain objective and courteous in criticising the work of his colleagues, and to accept criticism of his own work in the same spirit.

5. He should not plagiarize nor depart in any way from the principles accepted by artists in their relations with one another.

6. If he employs assistants or directs their work he should give them the benefit of his experience and help them in their efforts to reach a position commensurate with their abilities, both personally and within the framework of his professional organisation.

7. He should retain the full copyright of his designs in accordance with international conventions and the laws and customs of his own country.

8. His professional training should qualify him to direct and co-ordinate all the building trades, including those concerned with the pre-fabrication of building components and equipment.

9. If he seeks collaboration from artists, engineers or other specialists he should define at the outset their respective rights, duties and responsibilities.

10. He should use his moral authority to maintain harmonious relations between all those involved in the design and execution of his work, and should enable them to appreciate something of its intention and the spirit in which it has been conceived.

11. He is entitled to a fair and proper reward for the services he renders, in the form of a fee or salary, to the exclusion of any commission or profit, this principle being taken to cover the value to the community of all original ideas.

If he collaborates with industry in the development of new processes or methods of construction he is equally entitled to remuneration in accordance with scales to be determined by the National Organisation.

12. Any new form of professional practice must be based on the principles set out in this Code.

*The Hague, July 1955.*

## EVENTS AND COMMENTS

### PARIS

My overwhelming impression on revisiting Paris after 6 years was "Why, oh why had I left it so long?" The answer is quite simple. The minimum air fare is £12 and the cost of living is as high as it is in London with the difference that there are virtually no cheap restaurants.

All the same it is well worth the expense as far as I am concerned even for a very short stay.

What is new? What has changed? In the centre everything looks very much as before. There are numbers of new shop fronts and several startling but rather unlovely cafés where the light is brighter than day. Above the shops the buildings looked as if they have not been painted since my last visit. The Place de l'Opéra is noticeably quieter without the perpetual blast of motor horns and only the piercing police whistles can be heard above the general rumble. Nearby the Citroën showroom is packed all day by people of every conceivable sort from small children to "veuves" in full mourning, struggling for a sight of the very elegant new model. The Café de la Paix now has overhead electric heating on its terrace. This is a big improvement on the old coke or charcoal stove.

The police have the smallest type of Renault for patrol cars. Painted black and white, like piebald horses, they have no doors. In spite of rumours of traffic chaos I thought how much better one got along in Paris than in London. The elaborate east and west one-way system has been devised so that the Rue de Rivoli carries west bound traffic, the Quai des Tuileries east bound, the Quai Voltaire west bound and the Boulevard St Germain east bound. Tunnels are provided for through traffic at bridge junctions on the quais and the whole thing goes with a swing and a roar. The pedestrian as usual comes off worst. Public transport is changing too. The open ended bus with its rear platform for smokers is passing and this unrivalled vantage point from which to study Paris and its inhabitants will soon be no more. The new buses are much larger and have automatic folding doors for entrance and exit, and the conductor sits at a cash register, all in the Scandinavian manner. Only the metro with its scent of hot brake-blocks and garlic remains completely unaltered. First-class in spite of rumours and threats still remains although it only comes into force after 8 a.m. Fortunately the experimental perfuming of the metro air was abandoned. The only change I could detect was that fluorescent lighting had been installed in some stations. Taxis which now cost much the same as they do in London are ancient but fast and a drive in one loses nothing in thrills for being deprived of horn blowing. In the pale misty autumn sunlight the city looked magnificent and how glad I was not to find any familiar vista or skyline altered by new building. In the central areas there are practically no



Mr. F. G. West, A.R.I.B.A., at present Senior Architect in charge of the General Division of the L.C.C. County Architect's Department who has been promoted Deputy Architect to the Council, at a salary of £2,750-£3,250.

new buildings. Outside the old fortification line however, I saw many blocks of high flats being built: all of non-traditional construction.

### THE MARIE ANTOINETTE EXHIBITION

Having very little free time during my three day stay I determined to plan it carefully, and not to walk so far as to make my feet sore. Immediately I arrived at the air terminal I took a train to Versailles to see the Marie Antoinette exhibition which closed this week. Although the exhibition included a great deal of furniture and many family portraits I found the lesser and personal things more interesting. For example the domed blue velvet-covered drawing-room dog kennel at one time inhabited presumably by Charmant Zéphir, the Queen's white pom, whose stuffed body could be seen elsewhere in the exhibition; and then the two children's carriages designed to be drawn by goats. The first open and shaped like a sea shell and the second in the form of a closed travelling coach. The Queen's be-ribboned gardening tools were fixed to a wall alongside a series of original plans for the laying out of the grounds of the Petit Trianon.

There was too a wonderful display of Marie Antoinette's jewelry including a very fine diamond collar lent by the Duchess of Sutherland. The clothes exhibited showed the Queen to have been a minute person and this was born out by the very small size of the five or more harps in the furniture section.

As I could not afford a catalogue at 12s. (on top of entrance 4s.) I had to guess at the purpose of many of the strange tools, implements and gadgets in two huge fitted wooden canteens. They seemed to me to contain everything a beautiful lady would require when travelling from tea pots to back scratchers.

Many of the rooms contained police orders, letters, accounts or contemporary descriptions of events in the Queen's life. The last room containing records of her imprisonment and execution. Here were her calico prison clothes and the simple kitchen furniture from her rooms—an eyewitness sketch of her as she passed in the tumbrel and many other poignant reminders of her tragic end.

The exhibition was crowded with all kinds of people, many of whom were debating whether the Queen was good, bad or merely stupid. Walking among the still trim and flower packed parterres I noticed that major repairs were being done to the palace roofs in two places and many of the galleries appeared to be closed. Looking down at the grand canal and in the direction of the Trianons I was reminded as always of the odd things that those two English ladies saw or thought they saw there. On the way back to the station I stopped to examine the great wrought iron screen across the entry of the chateau. It had recently been re-gilded with real gold leaf. An agent seeing my interest bade me not to touch and said he supposed that I would like to put it in my note-case.

### NOTRE DAME

Back in Paris my next visit was to Notre Dame and in spite of my resolution I walked all the way there examining the wares of the "Bouquinistes" on the way. These odd people of both sexes look much as they did when I was a student but their stock has changed a good deal. Many still have Victorian and Edwardian prints and some sell rude books—carefully sealed in cellophane—but many now offer for sale reproductions of hideous water colour views of Paris and badly drawn "girls". There are still one or two dealing in old family photographs and second-hand postcards, but generally speaking the stalls are not as interesting as they were 20 years ago. Looking up at the people on top of the Tower of Notre Dame I was glad that I had done the climb long ago. In any case air travel has considerably reduced the attraction of climbing hundreds of stairs in order to see the view.

The interior of Notre Dame with its grey blackness and the piercing blues and reds of its great circular windows is one of my greatest favourites. And somehow the tramp and chatter of the crowds against the background of the almost continual "offices" seems quite in keeping where it would be unthinkable, say, at Canterbury.

### ETRUSCAN ART

My visit luckily coincided with the opening of the exhibition of Etruscan Art at the Louvre. This is the exhibition from Milan and I hope very much that London will be its next stop.

Although there are many sculptures shown which are familiar from our history books the exhibition astounds by its size, variety and quality. Many of the most charming things are among the smallest and there

are superb examples of gold and silver gilt vessels and jewelry. The exhibition is very well arranged in a series of rooms which have been specially lined out and lit to reduce their scale. The most striking attribute of much of the sculpture shown is the extremely naturalistic representation of expression on the faces of both young and old. To illustrate wall painting, the walls and ceiling, complete, of a fair sized tomb have been transported and erected in their original form.

I only had enough time to rush through some of the painting galleries of the main museum; to wonder again for a few minutes at the splendours of the "Galerie D'Apollon" and the French crown jewels, to nod to the Venus de Milo and spend a little longer looking at the Victory of Samothrace. Many old friends among the pictures had been cleaned since my last visit and looked quite new. I like this but there are many who do not.

Leaving the Louvre by the secondary stair I spotted a piece of Etruscan sculpture, as it were a resident piece, not included in the exhibition and justifiably sulking behind a pillar.

### THE RUSH HOUR

The Parisian evening rush-hour seems always to me more terrifying than the London brand. It is less staggered and moves faster in a wild competition between vehicle and pedestrian. A woman diving across a street in front of a horde of taxis tripped and fell at my feet, several people turned to help her and a man at my elbow announced in a loud voice, "Tout le monde est affolé."

The metro too is more frightening with its six abreast streams of walkers at interchange stations and its long waiting queues debarred from the platforms by "portillons automatiques" which close as a train enters the station.

In the rush-hour drivers accelerate away even more violently but I was astonished at their forbearance with the horn even when in a traffic bloc.

### JEAN-LOUIS BARRAULT'S ORESTES

I read in a newspaper that this famous actor's new piece had been well received and a friend most kindly procured me a seat. The programme was an inch thick and cost 4s. Not being a classical scholar I find Greek tragedy pretty difficult to follow even in English and it was not until the middle of the first act that I had sorted it out.

I thought the costumes were excellent but I was not sure that the masking of all the players throughout the piece was a great success. Particularly as it transformed M. Barrault's (Orestes) remarkable nose into a straight line. Marie Bell as Clytemnestra was blood-curdlingly magnificent—and how one can curse in French!

The last dramatic scene when Pallas Athene judges Orestes seemed to me to lack scale and to deteriorate

into the closing moments of a pantomime where the queen of the fairies puts everything right. Athene was too small, too white and too insignificant.

The sets were disappointing but, the lighting good. The music was, I am quite sure, very bad.

## FAME

I have said nothing of the real purpose of my visit which was to attend a meeting. At one of them a well-known German architect said, "I have read all the accounts of the I.U.A. Congress and the one by this fellow Abner was far and away the best. Who is Abner? Does anyone know? I always read him. I should like to meet him." And nobody knew.

## A.A. PRESIDENTIAL ADDRESS

A large part of Mr. Bryan Westwood's address to the A.A. is reproduced on other pages. You will find Mr. Westwood with both feet firmly planted on the quarterdeck, while he scans the architectural horizon with his clear, blue eyes. The paper is all good, sound stuff and contains a number of important points, perhaps the most important of which is his reference to the growing practice of local authorities in questioning final accounts and in interfering with the terms of the contract by ordering architects to withhold their final certificates until the local authorities own accountants give the word.

There was a good attendance at the meeting and nine past presidents of the association were there.

## MAX LOCK — PIANIST

In my column for October 20, I misinformed my readers on the number of hours a day that Mr. Lock practised the piano. I said it was four, but he now tells me it is two, and when he is in the Middle East, only one.

Until recently when he moved his office to 109 Gt. Russell Street, Mr. Lock lived and worked in the same building and so "while other people are travelling to work, I am travelling on the keyboard," as he put it.

All I can say is that this makes his recital at the A.A. more creditable still, and that now he too has a short journey to work I hope it won't affect his hours of practice.

And while on the subject of pianists, may I mention that according to *Time*, Mr. Wladziu Valentino Liberace has had the swimming pool in his new home in the San Fernando Valley built in the shape of a piano, bless his simple heart.

## TRETOL COMPETITION

I hear that Messrs. Tretol's plans for showing the entries for their "House for a Professional Man" Competition at the Building Exhibition are now well advanced. It is hoped that between 450-500 designs will be on view. I have also heard that the Assessor, Clifford Culpin, has had advice from Messrs. Gardiner and Theobald, Quantity Surveyors.

## CORRECTION

I apologise to Mr. H. A. R. Binney for the misspelling of his name last week.

ABNER

## Correspondence

### The Basilica of the Holy Sepulchre

Sir,—I have read with the greatest interest Mr. David Stokes' article on the Church of the Holy Sepulchre, which has been for so many years in need of serious repair. But I was astonished to find that, although Mr. Stokes gives an excellent summary of the building's history and structural problems, he makes no mention whatever of the detailed structural survey carried out in 1933-34 for the then mandatory Government of Palestine by my father, William Harvey.

My father, who had some years earlier been called in to advise upon the repair of the twelfth-century Katholikon Dome, shaken by the earthquake of 1927, spent over six months in making a detailed survey of all parts of the fabric, and drew up both interim and final reports upon its condition, with proposals for treatment. In conjunction with the Palestine Department of Public Works, he designed and supervised the temporary works of shoring and emergency repair carried out in 1934-35. Later he prepared a fully illustrated version of his Final Report, which was published for the Government of Palestine by the Oxford University Press in 1935. He had meanwhile been engaged in a similar full structural survey of the Church of the Nativity, Bethlehem, his report on which was likewise published late in 1935.

Probably few buildings have been studied in such exhaustive detail as was the Church of the Holy Sepulchre by my father between 1933 and 1935, and his work is of fundamental importance to any consideration of the building's future. It is, for example, important to note that all other plans of the church so far produced, including that reproduced on pages 518-19 of your current issue, contain many inaccuracies, due in part to the speed with which such plans were made, but mainly to the great difficulties of access which have to be overcome. They were overcome, in the case of my father's survey, only by the long-term co-operation of the Government of Palestine and the authorities of the many denominations involved.

It ought to be mentioned, in this connection, that only much reduced and simplified versions, of a part only of the voluminous survey drawings, could be reproduced in the published Final Report of 1935. That Report necessarily concentrated upon essentials, but outlined the whole of the major factors to be dealt with in the conservation of the structure, and in addition made strong recommendations in the direction of what Mr. Stokes calls "the principle of resuscitating the church the Crusaders used."

What are put forward by Mr. Stokes as new proposals (e.g. the disclosure and retention of the old columns hidden by the repairs of 1809-10, and the clearing away of partitions, as well as the insertion of internal reinforcement) are in fact substantially the recommendations made by my father in his report. It is a singular commentary upon the upheaval caused by the late war that it should be possible in this way completely to overlook so laborious and essential a work as that done by my father, and incidentally one which inevitably caused a heavy expenditure of official funds.

All power to whoever can save one of the world's greatest buildings (not least in its quality of embryonic Gothic of 1149), but give credit where credit is due.

Yours faithfully,

JOHN H. HARVEY.

## In Parliament

### The Axe Falls Again

In the Autumn Budget presented to Parliament the day after its return on October 25 from the long summer recess, the Government has dealt a heavy blow to the building industry. Its effects will no doubt be the worse because the axe was blunt. In addition to the curb on local and national projects—described as restraint in capital investment—which must intensify the consequences of the credit squeeze, the impending abolition of the housing subsidies will seriously affect local authority programmes, in spite of its proclaimed purpose to concentrate effort on slum clearance and the development of new towns.

The political controversy, violent though it is, on whether or not the April Budget was designed with the general election in mind, is irrelevant in this context. What has the Chancellor of the Exchequer now proposed? The problem, as he saw it in his Budget speech, was to relieve economic strains, and to forestall new pressures developing on already overpressed national resources in the novel conditions of overfull employment. Some indications of this that were recited were the persistent unsatisfied demand that materials and labour, or shortage of steel and other essential raw materials in spite of new production records, and an excess of demand showing itself not only in personal consumption, but also in the tempo of new investment which threatened to outstrip the growth and resources.

### Local Expenditure

In the public sector (leaving aside housing for the moment) local authority investment, Mr. Butler said, was an important element. It amounted to well over £200 millions a year. Authorities were being asked not only to restrain current expenditure but to review capital expenditure so that in 1956-57 it would not exceed the expenditure in 1954-55. The choice of capital projects which could be delayed with least harm was left to them. In addition, the authorities are to be exposed to the full rigour of interest rates. The Chancellor declared his intention to exercise a check on the volume of Government lending to local authorities, and all who could borrow on their own credit in the stock market or mortgage market must in future do so.

Restraint on investment was also to be applied to the nationalised industries. The roads programme would continue, but will be neither extended nor accelerated. Government building had been reviewed; the new Colonial Office building on the former Westminster Hospital site (costing some £3 millions) was to be halted where it stood, at basement level, and the same was to happen at the new Government offices being

erected in Horseferry Road. Abroad, the new Embassy buildings at Washington costing about £1 million (in dollars) was to be postponed.

Mr. Butler repeated, with fresh emphasis, that in the private sector there could be no relaxation of the critical scrutiny by the authorities of applications for finance.

Additional restraint on personal consumption was to be applied by an overall increase of one-fifth in the rates and purchase tax, and its extension in scope to cover kitchenware, table ware and other household goods at present excluded. Lastly, the tax on distributed profits was raised from 22½ to 27½ per cent.

### Subsidies Doomed

The housing subsidies, except for specified purposes, are doomed. They represented a capital expenditure in 1954, Mr. Butler said, of £390 millions. Since the end of 1951 about 1,500,000 houses had been built, and just under 2,500,000 since the end of the war. Of these about 2 million were houses built by public authorities for letting. Large numbers nevertheless were still needed, especially for two purposes—first, to rehouse families living in slums; and secondly, to provide homes and industrial facilities in the new and expanded towns. The Government's policy in future would be to concentrate on these two purposes, and to abolish the Exchequer subsidy and other purposes as soon as possible.

How this is to be achieved was explained by the Minister of Housing and Local Government on October 27. The subsidy on houses built or building was to stay, and for a year or so, to ease the transition, the general subsidy was to be reduced from £22 to £10 a house. To encourage the slum clearance work, the subsidy would be continued at the existing level for houses built for this purpose. For new towns and overspill areas it was to be raised to £24. A Bill to give effect to these changes would be introduced within a week, and the new rates would apply to any tenders approved by local authorities after the date. Concurrently, the system of housing allocations was to be terminated.

### Differential Rents

This statement also included some comments on the abuse of rent subsidies for council houses. Mr. Sandys said that this margin could properly be used towards financing future house building. The obstacle to differential rent schemes involved in the obligation to pay into the housing revenue account a fixed contribution from the rates would be removed, and authorities would be encouraged to introduce differential rents. Because the level of council house rents and those of privately owned houses were inter-related the Government would embark on a review of the Rent Acts.

## APPOINTMENT

Mr. D. A. Goldfinch, E.R.D., Dip.T.P., F.R.I.B.A., architect to the Birmingham Regional Hospital Board, has been re-elected Chairman of the Museum, Library and Education Committee of the Royal Society of Health.

The Society has recently commissioned Sir Hugh Casson to re-design its Museum of Health at 90, Buckingham Palace Road, S.W.1.

## PARTNERSHIP

Mr. D. Harvey-Browne, A.R.I.C.S., and Mr. K. E. Parker, A.R.I.C.S., have entered into partnership. The style and address of the firm will be Messrs. Parker & Brown, Chartered Quantity Surveyors, 71, Wimpole Street, London, W.1.

## CHANGE OF ADDRESS

Geoffrey A. Rowe, Dip. Arch. (Leeds), A.R.I.B.A., has moved to a new address, Little Breton, Kirkburton, Nr. Huddersfield. Telephone Kirkburton 370. Mr. Rowe continues to practice with Messrs. Abbey & Hanson at 11, Cloth Hall Street, Huddersfield and 11, Wyle Cop, Shrewsbury.

Arthur T. Beer, B.Arch., A.R.I.B.A., has removed his office to Victoria Chambers, Bridge Street, Newport, Mon. Telephone—Business, Newport 63325, Residence Newport 72316.

## COMING EVENTS

### The Institute of Fuel.

November 9 at 5.30 p.m. Talk on "Chimneys and the Dispersal of Smoke," by J. E. Hawkins and G. Nonhebel, at the Institution of Civil Engineers, Great George Street, S.W.1.

### The Institution of Structural Engineers.

November 9 at 6.30 p.m. London Graduates' and Students' Section. Lecture on "Engineering in Architecture," by G. I. Goulden, at 11 Upper Belgrave Street, S.W.1.

### Royal Society of Arts.

November 9 at 2.30 p.m. "John Flaxman, R.A. (1755-1826)," by John Thomas, M.A., Ph.D. Professor A. E. Richardson, F.R.I.B.A., President, Royal Academy of Arts, in the Chair. At John Adam Street, Adelphi, W.C.2.

### Victoria and Albert Museum.

November 9 at 6.15 p.m. "The Rock Churches and Mediaeval Art of Ethiopia" by Beatrice Playne. At the Victoria and Albert Museum, South Kensington, S.W.7.

### The Royal Institution of Chartered Surveyors.

November 14 at 5.30 p.m. Ordinary General Meeting. The President, W. R. Brackett, O.B.E., T.D., B.Sc., F.R.I.C.S., will deliver his Presidential Address. At 12 Great George Street, S.W.1.



photo: John McCann

Work in progress on the National Dock Labour Board Offices, Albert Embankment, seen from across the River.  
Architect: Frederick Gibberd. Contractor: Wates Ltd,

## C.C.A. School Building Deputation

Officials of the Ministry of Education received on October 20 a deputation from the County Councils Association who wished to put to the Minister a number of points about the cost and control of new school building. The deputation was headed by Mr. W. E. Stevens, Vice-Chairman of the C.C.A. Education Committee. The Deputy Secretary represented the Minister.

The deputation asked the Minister to review further the limits of cost per place at the earliest possible date with a view to their being raised at least sufficiently to cover the increases in building costs since 1953. The deputation were reminded that, in accordance with arrangements announced in Circular 264 for varying the limits of cost when the Ministry's index of school building costs showed a movement of 2 per cent. or more, the cost limits were raised in April of this year to £264 per place for secondary schools and £154 per place for primary schools. In the Minister's present view these increases had been adequate. The average nett cost on tender of secondary schools for the months January-September 1955 was £241.9 and the average area per place was 74.0 sq ft. The average nett cost per place on tender of primary schools over the same period was nearer the cost limits, being £142.3; the average area per place was 42.2 sq ft. It thus seemed to the Minister that it was possible to design these schools with an adequate specification and area within the current limits of cost. Moreover the Ministry's index of costs had not, up to the middle of October, shown a two per cent rise. The deputation were told that, although the Minister would continue to keep the cost of school building under review, he could not, in view of the available evidence and the general need for restriction of capital expenditure, promise an immediate increase in the cost limits.

The deputation next expressed concern that the Ministry's financial restrictions were beginning to cause educational inconvenience and adversely to affect school organisation. In the view of the C.C.A. the limit of proper economy had been passed. The deputation were asked to give instances of what was meant by educational inconvenience and an adverse effect on school organisation, and to indicate where they thought the limit of proper economy had been passed. They instanced the dual use of space, particularly of dining space, and reductions in the amount of circulation areas. It was pointed out to them that the system of cost control was related to the educational building standards of 1952. If those were satisfactory—and they appeared generally to have been accepted as such—present standards were also satisfactory. The periodic adjustments in

the cost limits were intended to operate so that authorities could continue to use as much labour and materials on a new school as they did at the end of 1952. The cost limits themselves were also meant to act as incentives to good economic design and consequent high quality. They could not ensure that every authority would have the same standard of building.

While such factors as the nature of the site and variations in regional building costs would effect authorities in different ways the major factor determining the kind of school that was obtained within the cost limit was the skill of the architect. The cost limits were set to make it possible for the architect of average ability to provide a school of a reasonable standard. It was, therefore, only to be expected that one or two authorities would have new schools which were only just adequate while a few authorities within the same cost limits would be able to build schools of exceptional quality. No school, however, could be allowed to provide less, either in terms of area or physical conditions or amenity, than was required by the Building Regulations, and in the Minister's opinion the cost limits were adequate for that minimum provision.

The deputation asked the Minister to review the percentage additions to the nett cost of schools, in respect of roads, paths, boundary fencing, site clearance, etc. They were told that since the items excluded from nett cost were those which could be expected to differ in extent between one school and another it was not possible to put a firm limit of cost on their provision. The Minister added a percentage of the limit of nett cost to each job when compiling a building programme to ensure that, taking all jobs in a programme together, the total amount of money available for capital expenditure was not exceeded. The percentage figure, however, was that which was found by experience to be the average. Estimates of the money thought necessary for additional cost items in particular proposals were always examined on their merits, and this year, for instance, the sums actually allowed for additional costs varied from 4 per cent to 30 per cent of the nett costs. The Minister was glad to remove any misunderstanding which may have arisen on the matter.

The deputation's final request was that the Ministry should re-examine in consultation with the Association the whole problem of securing satisfactory and generally acceptable natural lighting standards in schools. They had in mind that the existing formula should be simplified, or removed from the Regulations and left to the discretion of local education authorities to be exercised in the light of the considerable experience they now possess and of any advice the Minister might wish to issue by means of a Departmental circular. The deputation were informed that the

Minister could not give up his responsibility for setting standards. The formula was not complex in itself, but only because of the complex nature of the subject. It was suggested that as a first step towards clarification the Minister should send a letter to the Association explaining the background to the formula and the reasons for its adoption. If the Association then wished to discuss the matter further another meeting could be arranged. The deputation agreed to this course.

## Advisory Service for the Building Industry

The Advisory Service for the Building Industry is now ready to undertake surveys for building firms, whether or not they are members of the National Federation of Building Trades Employers. Fees will be arranged in each case.

The Service was set up by the National Federation in 1954 to advise firms in the Building Industry on the use of such management techniques as costing, work study, site organisation, bonus schemes and mechanisation. A grant for starting the Service was received from American Conditional Aid Funds.

The staff of the Service, who have had previous experience in the Industry, have been trained by professional consultants in management techniques on the sites and in the office of building firms of different sizes doing various types of work in all parts of Great Britain. They are now ready to advise builders on how to reduce costs and increase output.

Building undertakings requiring advice on any aspect of their activities should therefore write (or telephone) to the Advisory Service at 82 New Cavendish Street, London, W.1. (Telephone LAngham 5236). An appointment will then be made for a preliminary discussion at which a date will be fixed for a visit to study the problem in detail. A written report will normally be submitted, and help can be given in adopting the recommendations made.

## Education for Management

The L.M.B.A.'s annual Education Conference is to be held this year in Apothecaries Hall, Blackfriars Lane, E.C.4, and the Minister of Education, Sir David Eccles, has agreed to open it. It takes place on the afternoon of Friday, November 11.

As craft apprenticeship has been very fully considered at previous conferences, it has been decided that the theme of the conference this year will be Education for Management. Mr. H. J. Shelley, C.B., O.B.E., Chief Inspector for Technical Education at the Ministry of Education, is to give a short address on the National Certificate and Diploma Scheme, and Mr. D. A. G. Reid, Principal of Brixton School of Building, is to speak on the Sandwich Course at Brixton.



## OFFICES, WELWYN GARDEN CITY

*For Plastics Division, I.C.I. Ltd.*

*Architect: E. D. JEFFERISS MATHEWS (J. Douglas Mathews & Partners).*

**T**HE department required an office block of 31,800 sq ft to be arranged generally in a large number of small and medium sized separate offices relying principally on natural lighting and ventilation. The block was to form one of three blocks of similar size.

The requirements and site dictated a long narrow block with offices each side of a central corridor. To meet the need for offices of two depths, the corridor is off-set off the centre line, the structural spine frame being on one side of the corridor. A study of existing standard office furniture of the company and accommodation led to the choice of a 5ft 6in module on the longitudinal axis. On the lateral axis the 4ft 0in module was considered to provide the best dimensions and it simplified cross partitioning.

### Structure

The structure adopted to meet all requirements consists of a pre-cast reinforced concrete "H" frame on a 5ft 6in structural grid, with each unit of the frame measuring the height of a single floor. Vertical members of the frames therefore, form continuous mullions

on the external face of the building. The floor is united to and forms part of the structure. It is composed of pre-stressed pre-cast reinforced concrete joists spanning between the "H" frame and across the spine frame. Permanent shuttering is suspended between the joists and a thin (1½in) mesh reinforced "skin" poured over to provide both the structural unification of the whole floor slab and the structural tie. The floor is floated off to avoid the need for screeding.

The spine frame stops under the floor of the top storey and the whole width of the building is spanned by light steel roof trusses designed on the principal of an "A" frame giving very low steel tonnage. To achieve this most economically the 15° pitch roof was adopted.

### Services

Heat and power sources come from the company's centralised plant. Space heating is by low temperature hot water in convector radiators along the perimeter walls. Electric services are those normal for offices including certain services for accounting machinery. Two main runs traverse the length of the building on

## Offices for I.C.I. Plastics

each side of the corridor, and mains also run along each perimeter wall. Electric mains are all readily accessible to enable changes in partition arrangement and point requirements to be met without "cutting away and making good".

The electric mains down each side of the corridor are in metal ducts which form the head of the longitudinal partitions. Cables can easily be drawn from these boxes to switch leads down the partitions—the partition framing permits these leads to run at regularly defined points so that they are accessible to any door position that may be selected in a 5ft 6in module.

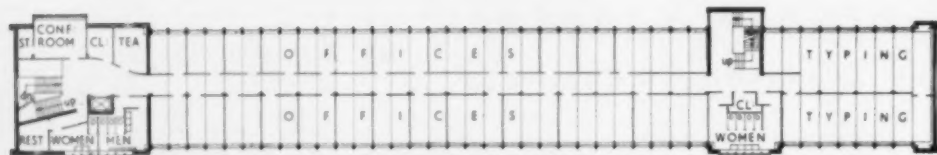
The space heating circuits, the convector radiators,

and the electric services along the perimeter walls, are surface run between floor and window cill on the back of the internal lining of the cladding panels and on the back of the pre-cast concrete frame. A "dry" construction casing, combined with the convector radiator casing, and similar casing to the vertical members standing clear of structural members of the frame and provides concealment for these services. The vertical casing also provides for vertical risers for heating pipes and electric conduits and also, at intervals, for the rain-water down pipes, all of which are run internally. Telephone cables take up similar alignments to the electric mains.

Continued on p. 552



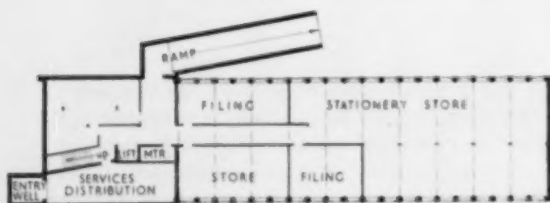
SECOND FLOOR PLAN



FIRST FLOOR PLAN



GROUND FLOOR PLAN

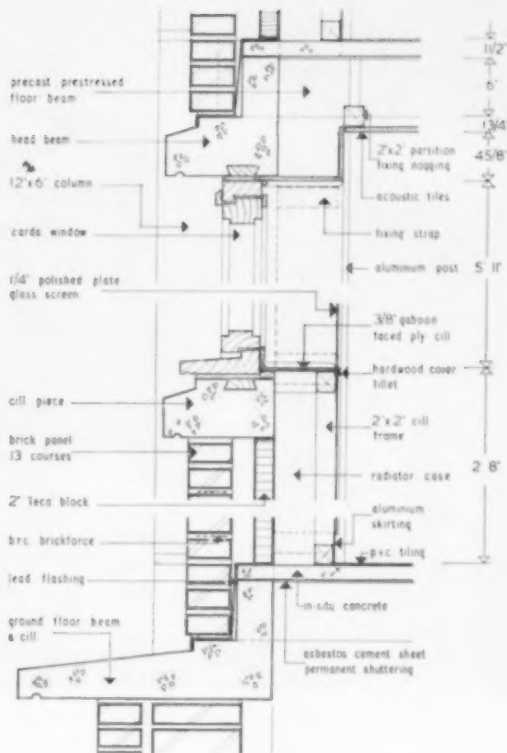
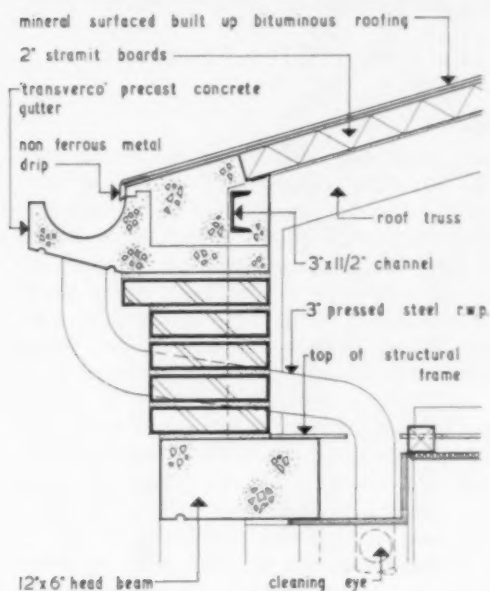


BASEMENT PLAN

PLANS & SECTIONS  
SCALE: 1 in = 48 ft



TYPICAL SECTION



EAVES AND WINDOW SECTIONS SCALE: 1 in = 1 ft

Architect: E. D. JEFFERISS MATHEWS

Associate Partner in Charge: R. S. POOLE

Consulting Engineer: FELIX SAMUELY

Engineering Dept. Plastics Division I.C.I.

J. W. MAYHEW (Site Supervision and Contract Administration)

J. M. MORRISON (Electrical and Mechanical Design)

Quantity Surveyor: R. E. N. LOWE

General Contractors: WELWYN BUILDERS LTD.

#### Sub-contractors:

Acoustic Ceiling Tiles: Campbell Denis Ltd.

Blinds—Venetian: J. Avery & Co. Ltd.

Bricks—Facing: R. Y. Ames Ltd.

Doors: Flexo Plywood Industries Ltd.—to Water Closets. Wm. Mallinson & Sons Ltd.

Flooring: P.V.T. Korkoid Decorative Floors

Ironmongery: Pryke & Palmer Ltd.

Lift: Marryat & Scott Ltd.

Metal Grilles & Balustrade: E. Coules & Son Ltd.

Mullion Casings (Internal): Edmonton Panel Co. Ltd.

Partitions: Stramit Boards Ltd. (internal); Flexo Plywood Industries Ltd. (Water Closets)

Precast Concrete Units & Stone Dressings: Atlas Stone Co. Ltd.

Precast, Prestressed Concrete Units: Holland and Hannen & Cubitts

Roller Shutters: Dennison Kett & Co. Ltd.

Roof Covering: Standard Flat Roofing Co. Ltd.

Roof Panels: Stramit Boards Ltd.

Sanitary Fittings: John Bolding & Sons Ltd.

Sprinkler Installation & Mechanical Services: Matthew Hall & Co. Ltd.

Slate Window Surrounds: The Bow Slate Enamel Co. Ltd.

Structural Steelwork: Sommerfields Ltd.

Strong Room Door: The Chatwood Safe & Engineering Co. Ltd.

Windows—Metal: C. E. Welstead Ltd.

Holcon Ltd.—Wood pivot hung windows.

Entrance Hall



Curved partition faced with corrugated plastic sheeting

## Offices for I.C.I. Plastics

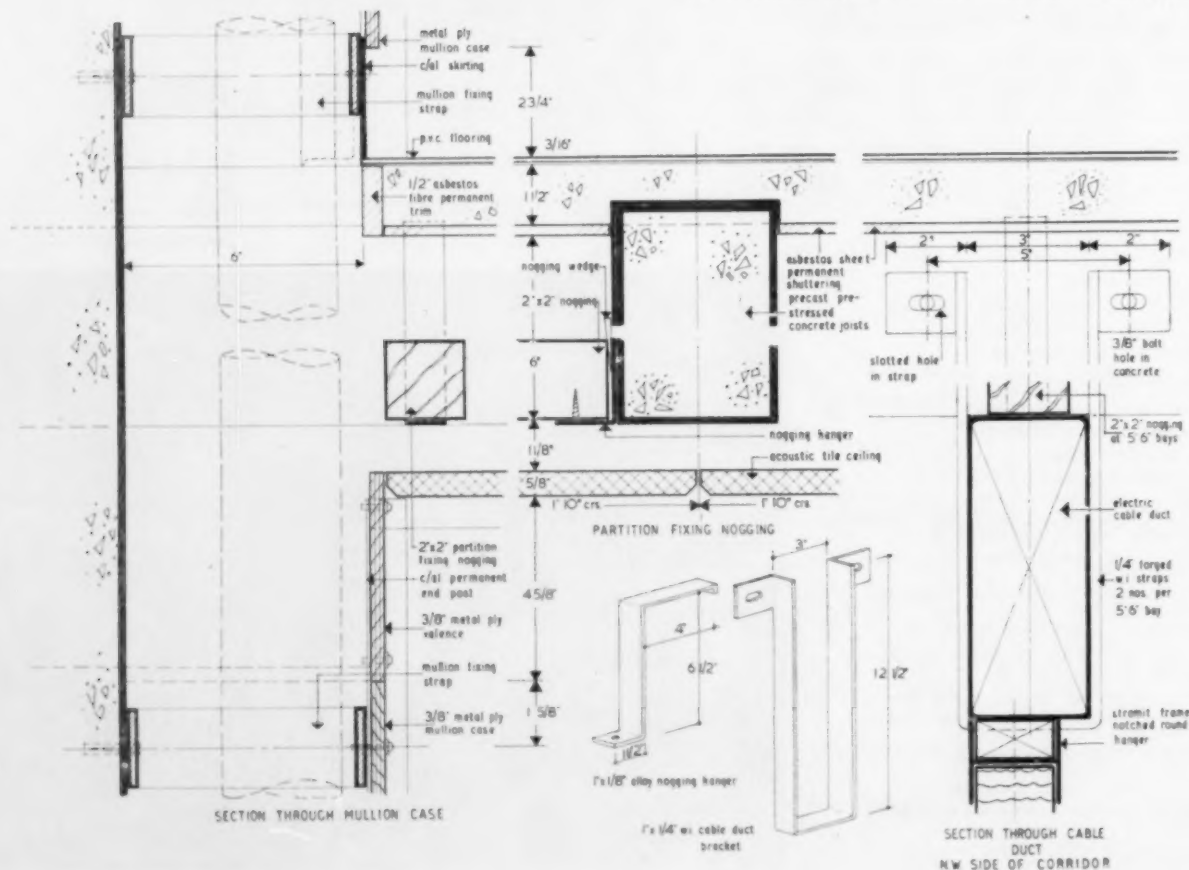
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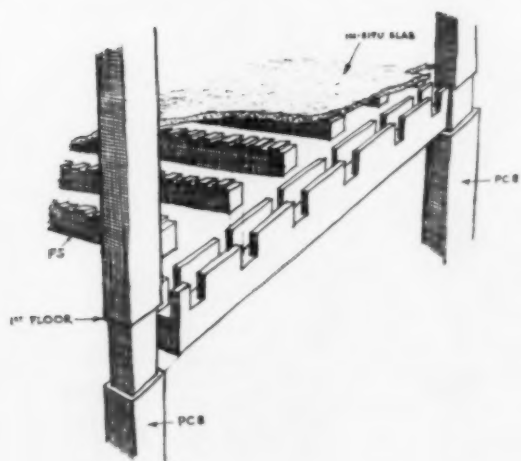
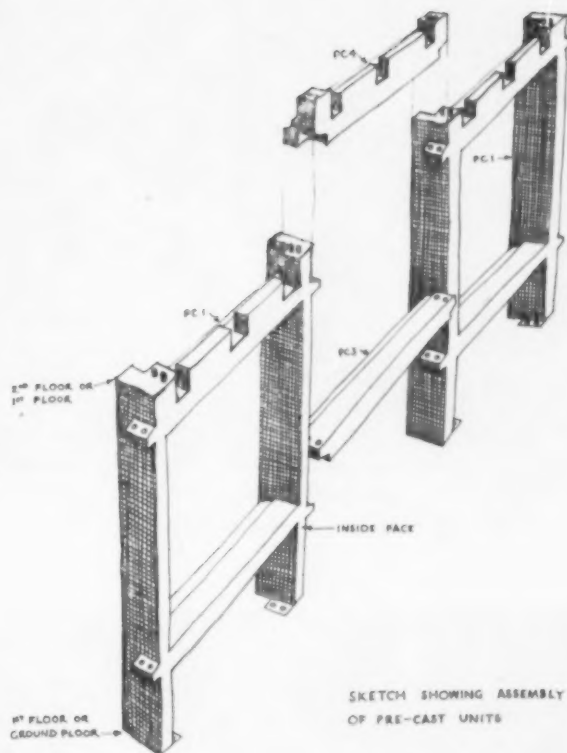
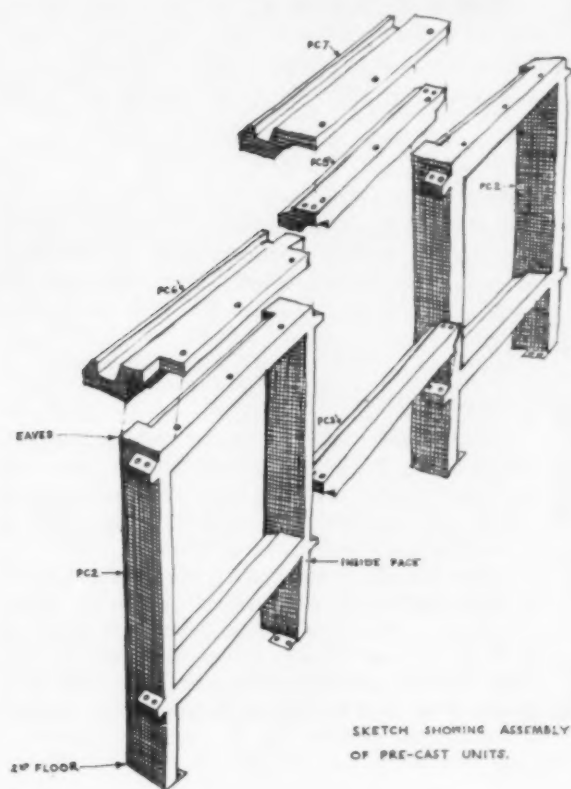
### Finishings

The cill panels of the pre-cast concrete structure are faced with buff-pinky coloured 2in Dutch facing bricks with cavity and an internal partition block inner skin of high thermal insulation. The other faced brickwork is in the same Dutch facings. Windows to offices are in hardwood with centrally pivot hung double glazed sashes with Venetian blinds hung between the inner and outer glazing. The roof is built of compressed strawboard panels covered with built up bitumen sheet roofing and pea grit. Rainwater guttering is pre-cast and the gable and verges are *in situ* cast concrete with a high degree of finish comparable to artificial stone.

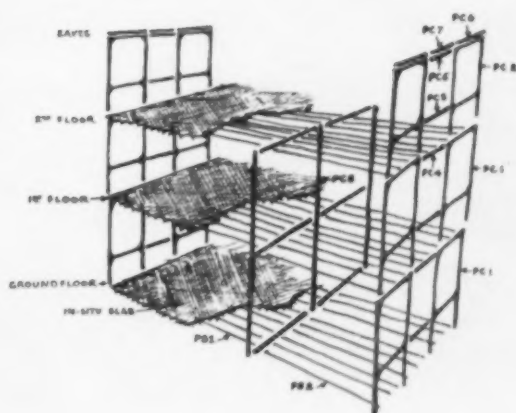
Demountable partitions for the offices are compressed strawboard in aluminium framing, decorated with emulsion paint. Cross partitioning is on the 4ft 0in lateral module and to take up the difference between the 4ft 0in standard size for the partitioning panel and the 5ft 6in longitudinal module; 1ft 6in partition panels are formed centrally on each 5ft 6in module line.

Below, Section through corridor cable duct. Scale:  $\frac{1}{4}$  F.S.





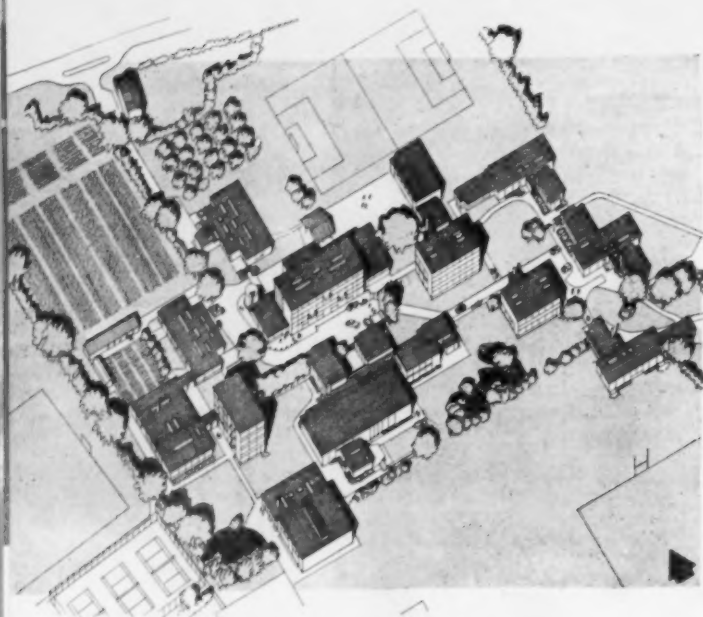
SKETCHES OF THE STRUCTURE



Consulting Engineer:  
Felix Samuely

## WOODLANDS SCHOOL COVENTRY

Architects: D. E. E. GIBSON and ARTHUR LING in collaboration with  
S. A. W. JOHNSON MARSHALL, C.B.E. Chief Architect to M.o.E.



Drawing showing the completed scheme

**T**HIS school is the result of a joint undertaking by the Coventry Local Education Authority and the Development Group of the Ministry of Education. When completed it will accommodate 1,650 pupils, an annual entry of ten forms, and is capable of extension to twelve forms of entry. A seven form entry instalment has been built and the remainder started.

### Planning

It was realised from the outset that there was a danger of building a vast institution in which the children themselves would be lost. The planning of the school was therefore approached by trying to break down the whole in two particular ways.

In the first place the House system was adopted as a social unit for most purposes. In the completed school there will be ten Houses, grouped in pairs. In each House there is space for the boys to keep their books and kit, and a House-room of about 1,100 sq. ft. This will be used for part of the time as an ordinary

House block and four storey teaching block



teaching space, but its main purpose is to provide an area in which morning assembly, dining and other House meetings of various kinds will take place. Each pair of Houses is served by a kitchen.

Each of the Houses is under the care of a House-master with several other members of the staff to assist him. In this way the boys will be given personal attention and guidance in groups which are small enough for the staff in charge to know each boy and his needs individually. It is also an essential element of the House system at this school that the pupils in each House will represent a complete cross-section of the school in age and ability.

The second way in which the school was broken down was by arranging the teaching accommodation in blocks, each dealing with functionally related subjects. This method also helped to reduce circulation space and made it easier to build the school by instalments.

The separate blocks into which the teaching accommodation is divided are: (a) Halls, library and administration. (b) Three teaching blocks. (c) Light and heavy crafts. (d) Science and workshops. (e) Gymnasium. (f) House blocks.

The central block (a) includes a large hall, an adjoining hall to be used mainly for physical education, a small hall for day to day drama and music, and the main school library. It also contains accommodation for the Headmaster, Assistant Headmaster and Secre-

tary together with a Medical Inspection room and a central staff room (which is not as big as might be expected for a staff of 80 since there are subsidiary staff rooms in each of the Houses).

The two classroom blocks (b) already built are of two and three storey respectively. They are similar in layout, having four classrooms on each floor with a common work-space and store (these work-spaces are planned as far as possible within the circulation and storage area). The third teaching block is in the second instalment and will be in four storeys.

The light and heavy craft block (c) is in the second instalment and will consist of four rooms for light crafts and two workshops all in one storey.

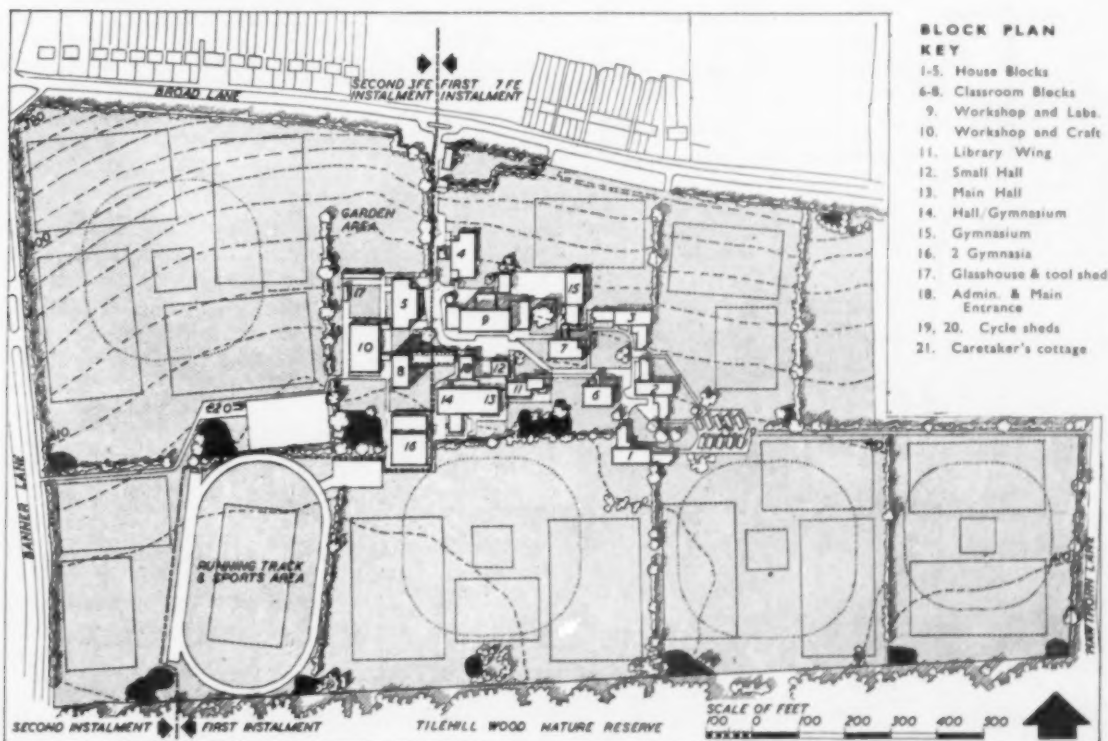
A three storey block (d), containing six laboratories, three advanced laboratories, eight workshops and one light craft room, is illustrated on page 556.

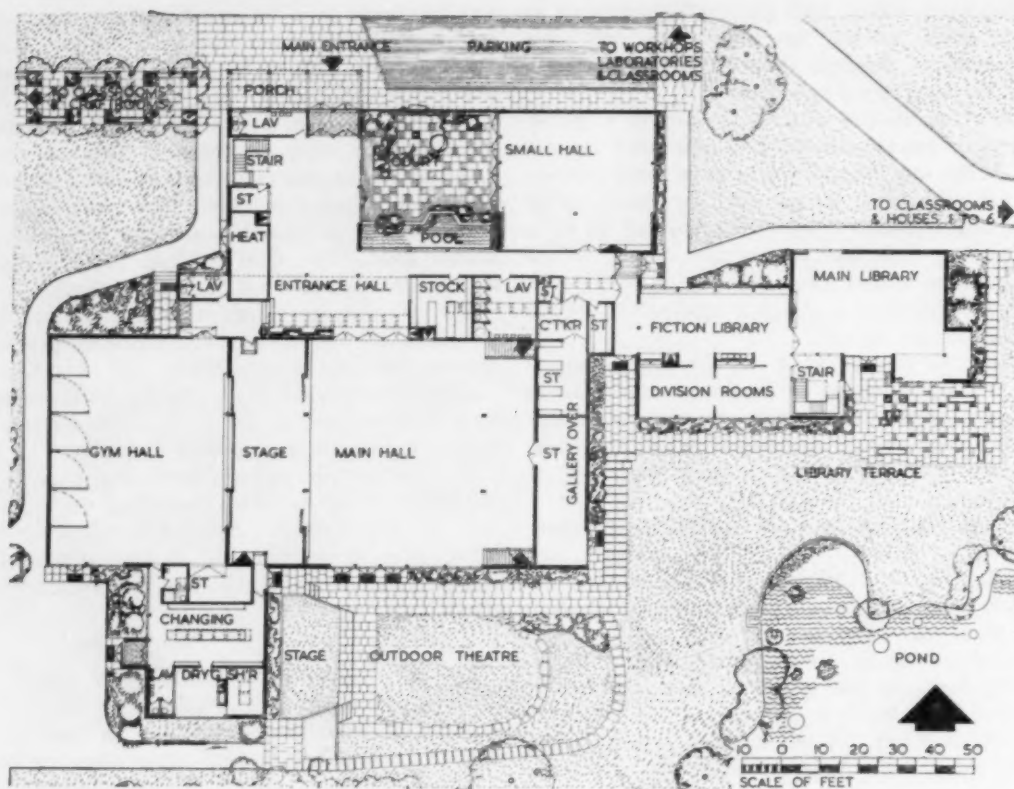
The complete plan provides for three gymnasias. Two of these are in the second instalment and will be placed near the playing fields. A changing room has been incorporated in the hall and administrative block so that the gym/hall can also be used for physical education.

#### The Site

The site chosen for this school covers a little over 52 acres and is about three miles from the centre of Coventry on the Birmingham road. On most sides of it there are large new housing estates where the pupils

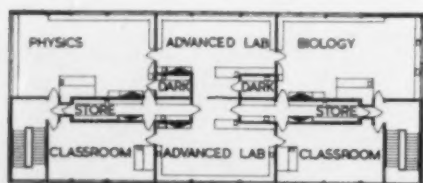
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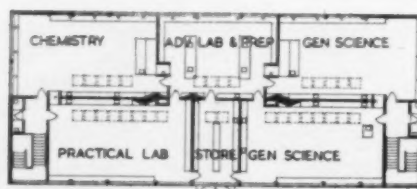


GROUND FLOOR, CENTRAL BLOCK

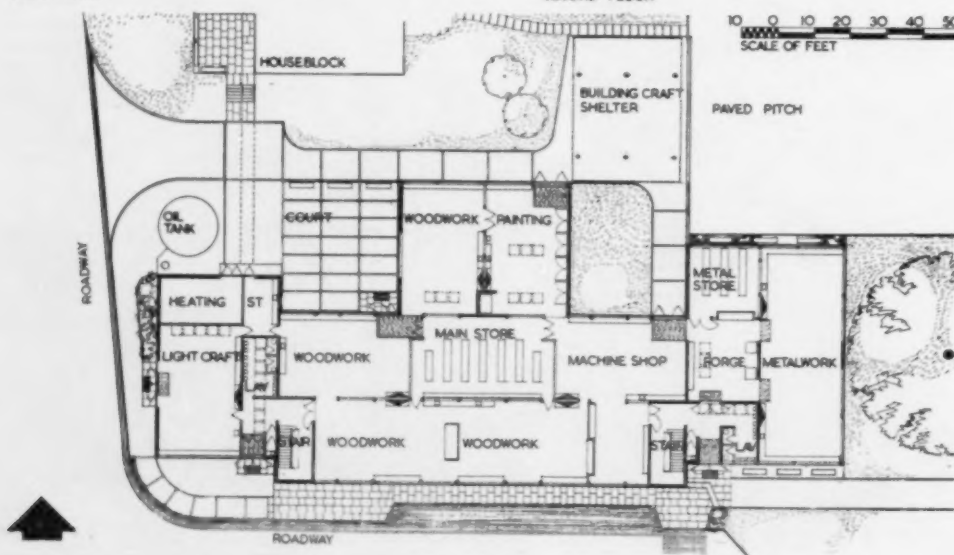
BELOW: WORKSHOPS AND LABS.



FIRST FLOOR



SECOND FLOOR



## Woodlands School, Coventry

Continued from page 555

live. On the south side there is a nature reserve from which the name of the school is derived.

The buildings occupy some six acres of the site and are arranged so that the Hall and Library block is at the centre with the teaching blocks and craft and science blocks around it and the House blocks and gymnasias on the periphery. There is land set aside for gardening and rural studies, with a greenhouse and barn; also for playing fields, laid out generally according to the block plan (p. 555).

### Construction

It was originally intended that the school should be a new version of an aluminium system of construction previously only used for single-storey primary schools. But another school in Coventry was used as the prototype for this system of construction, and instead it was decided to use for the Woodland School the system developed at Wokingham (see Building Bulletin No. 8) with some modifications to increase economy and simplify manufacture and erection. The second instalment of woodlands is being used as a vehicle for yet further development of the system.

In the first instalment the frame is generally similar to that used at Wokingham and is based on a 40in plan module and an 8in vertical module. The minor alterations include the substitution of a 4½in square stanchion of rolled steel angles for the pressed steel single-storey stanchion used at Wokingham.

The frame in the main hall is of interest. Here the standard components used throughout the school were supplemented by the introduction of intermediate columns to support special main beams which receive normal 20ft span roof beams.

A minor modification was made to the eaves. The pre-cast eaves block is here used as a wind bracing (thus eliminating some steel work) and projects less than at Wokingham. For the fascia painted softwood has been substituted for pressed metal. In the cladding some modifications of detail were made. The cladding is supported on frames which are factory welded, as against the site bolting process used at Wokingham. A technique was evolved for fastening the plaster board sheets to the inside face of the cladding slabs with plaster.

For the partitions Gypsum Plaster Honeycomb slabs with poured and skimmed joints were used. Beam casings, stanchion casings, ceiling trims, cornices top-ceilings are of vermiculite-cement slabs. In the Halls ceilings are of vermiculite-cement slabs. In the Hall and Library a fibrous plaster ceiling has been used in which panels 2ft 8in square rest on fibrous plaster rails wadded to the beams above. There are two types of panel, one is perforated and the other is solid with a reeded finish.

The roofs are of 2½in thick wood-wool in slabs 6ft 8in × 1ft 8in with vermiculite screed covered with two-ply built up roofing and granite chippings. The

site slab contains damp-proof membrane of coal-tar-pitch. Floor finishes include rubber tile, P.V.C. tile, P.V.C. sheet, P.V.C. lino and chipboard. Grano is used in stores and in some workshop area.

The heating is by a warm air system using both vertical and horizontal type cabinets. The boilers serving the various blocks are oil fired. They are fed, by pressure, from a central oil tank. Wiring is mainly by means of braided cable, but there is a small amount of P.V.C. cable. The plumbing is mainly copper. In the science laboratories there has been extensive use of polythene.

### Cost

The tender for the first instalment of this project amounted to £318,979. This was made up of a net cost of £281,761 plus an additional £37,218 for external work such as playing fields, site layout and services.

The net cost per place works out at £234 16s. 0d. which compares with a cost limit operative at that time of £240. The same limit of cost per place applies to all types and sizes of secondary schools, except secondary technical schools. It will thus be noted that the cost per place for a large comprehensive school built on a "compus" plan, such as the Woodlands School, is the same as that for a similar type of school built in a compact multi-storey slab block, such as some of the London County Council comprehensive schools, or for a small rural secondary modern school or for a modern sized urban grammar school.

### Assistant Architects:

J. C. LOYD, M. SMITH, J. E. TOOMER

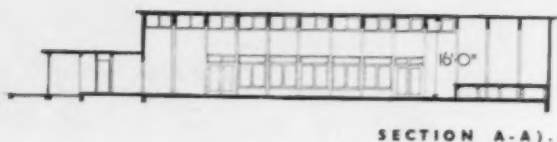
### Quantity Surveyor: J. NISBET

General Contractors: HIGGS AND HILL, LTD.

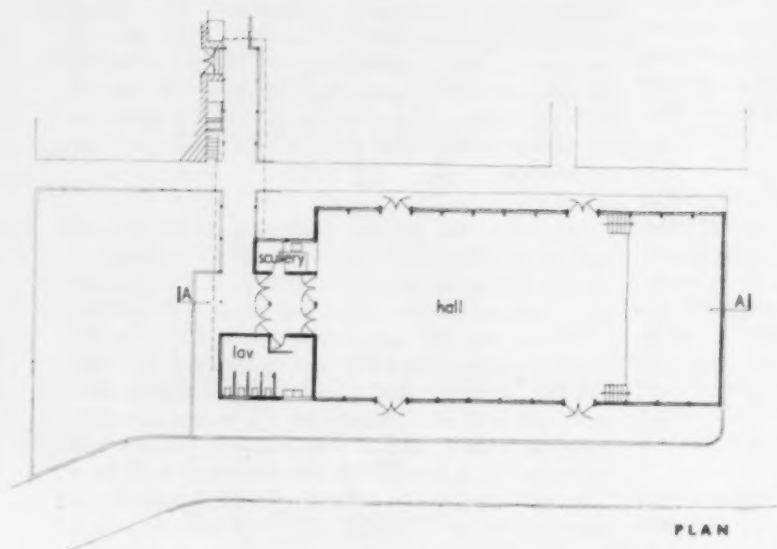
Ceiling Erection: Campbell Denis Ltd. Ceilings: Bryan's Adamanta Ltd., Metamica Ltd. Curtains: Gerald Holton. Doors: E. S. A. (Esbian) Leaderflush Ltd. Electrical Installation: Leo Beesley Ltd. External Work: Roaddrive. Fans: Greenwood's & Airvac Ventilation Co. Ltd. Fibrous Plaster and Bellrock: Bryan's Adamanta Ltd., John Kent & Co. Ltd. Gas Services: West Midland Gas Board. Hardwood Flooring: Hollis Bros. Ltd. Heating: Weatherfoil Heating Supplies Ltd. Ironmongery: James Gibbons Ltd. Joinery: Troy Joinery Cabinet Co. Ltd. Laboratory Planning: Chemical Pipe Co. Library Shelves—Metal: Libraco Co. Ltd. Murals: Norman Adams. Phenolic Floors: Phoenix Rubber Co. Ltd. Plumbing—Copper Waste: Econa Modern Products, Ltd. Roofing—Wood Wool Modular Slabs: Thermacoust Slabs. Roofing Felt: Wm. Briggs & Sons Ltd. Rubber & Crestoline Floors: Haskell, Robertson & Co. Ltd. Sanitary Fittings: Adamax Ltd. Staircases: Light Structures & Casements Ltd. Weyrac Flooring: Aladdin Ltd.

### Classroom

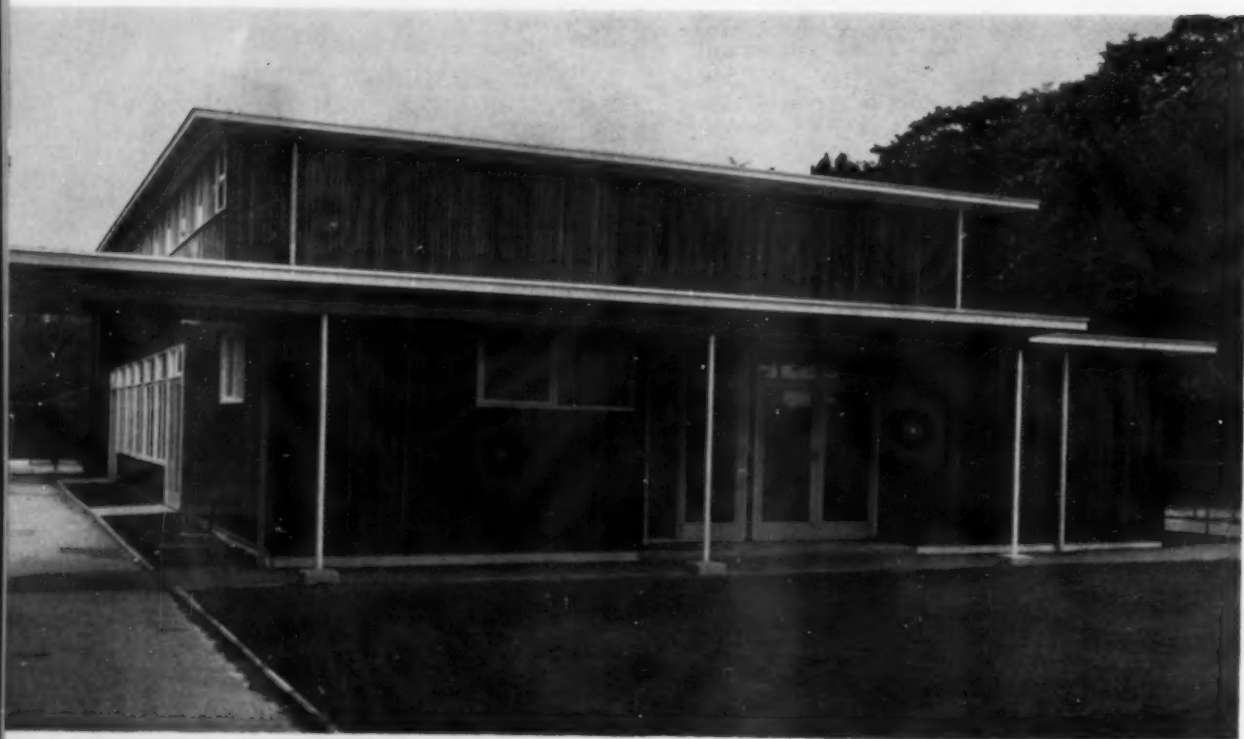




SECTION A-A).



**NEW  
LECTURE HALL  
AND  
COMMON ROOM  
for the  
Lancashire  
Institute of  
Agriculture**



Architect: G. NOEL HILL  
County Architect

Architects in Charge:  
G. S. PESTER  
Assistant County Architect  
A. H. GALL



BLOCK PLAN

**T**HIS new hall at Hutton, which was opened recently by the Minister of Agriculture and Fisheries, marks the Diamond Jubilee of the County Agricultural Institute. The institute has 130 students, 54 of whom are at Winmarleigh Hall; the new building will allow these students to play a greater part in Hutton activities.

The hall, which is linked to the main building at Hutton by a covered way, has an auditorium 63ft 0in  $\times$  16ft 0in high, a stage 19ft 0in  $\times$  38 ft 0in and also an entrance hall, ladies cloakroom and scullery.

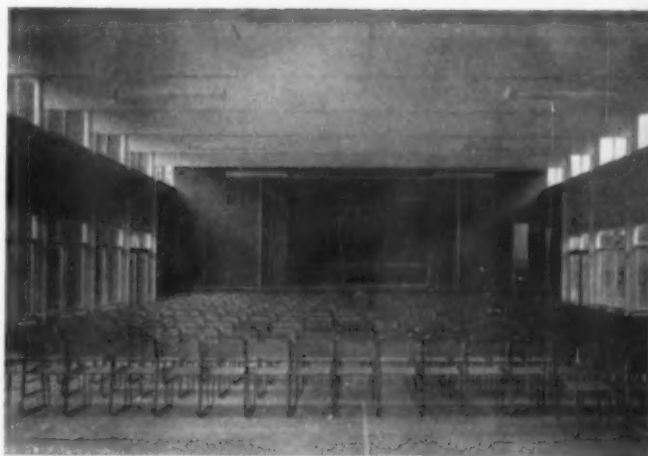
Provision has been made by means of service hatches with roller shutters for serving light refreshments and sweets from the scullery directly into the hall. Also projection ports have been provided so that the Institute's projector can operate from the scullery. The hall is wired for sound from the projector, gramophone or microphone to a loudspeaker sited behind a grill in the proscenium front.

The building which is of "Derwent" prefabricated timber construction comprising a red deal framework clad externally with "Sapele" mahogany and internally with plasterboard, is built on concrete foundation and sub-floor. The roof, which is insulated, is covered with 3-layer roofing felt covered with limestone chippings. The flooring is strip maple on insulated battens.

Light and varied colours have been selected for the decoration to give a bright and cheerful effect and contemporary wallpaper has been used to pick out the proscenium opening and entrance hall. The natural colour of the "Sapele" mahogany gives a rich appearance externally, which has been preserved by the application of a special clear varnish.

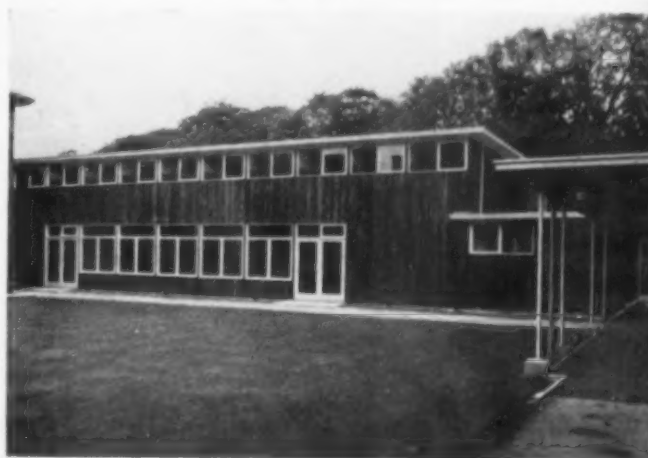
Central heating has been provided from the existing boilers serving the Institute, and hot water is supplied by electric water heaters.

The general contractors for the building were Baxendale Bros. (Chorley) Ltd., Chorley, and the "Derwent" structure was supplied and erected by Vic Hallam Ltd., Nottingham.



Interior of the hall

Exterior and covered way to existing building





**T**HIS new building at the corner of Glebe Street and Stirling Road replaces the Post Office in Castle Street which has now become inadequate.

Erection was started on 30th November, 1954, and the building operations were completed on 15th August, 1955. The cost is approximately £20,000.

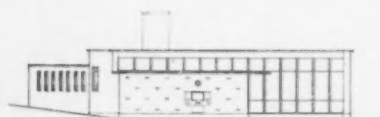
External walls are in a dark brown brick with cream stone dressings from Auchinlea Quarry. The windows are standard type steel. Roofs are of prestressed and hollow concrete slabs covered with asphalt.

The accommodation comprises a large Public Office, Supervisor's and Telegraph Instrument Room, Welfare Rooms, etc. Heating is by means of low pressure hot water from a boiler house in the basement. Artificial lighting in the Public Office is from fluorescent tubes hung above a "Diffulite" ceiling, except at the telegram writing tables where there are individual lights.

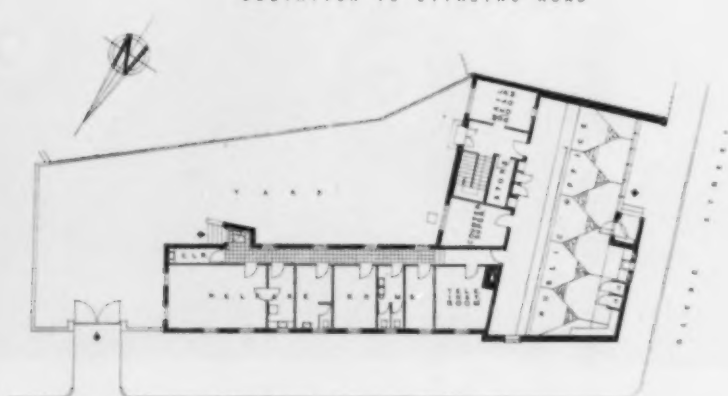
Most of the front of the building to Glebe Street is in glass which has been carried from beneath a wide projecting canopy to the floor. The entrance at right angles to this glass front is through a door decorated diamond-wise in strong colours. In the Public Office the long counter front of Macassar Ebony is



ELEVATION TO STIRLING ROAD

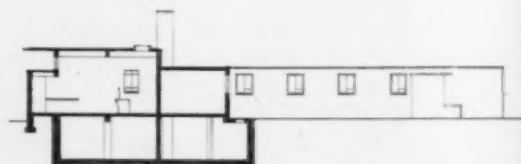


ELEVATION TO GLEBE STREET



STIRLING ROAD

PLAN



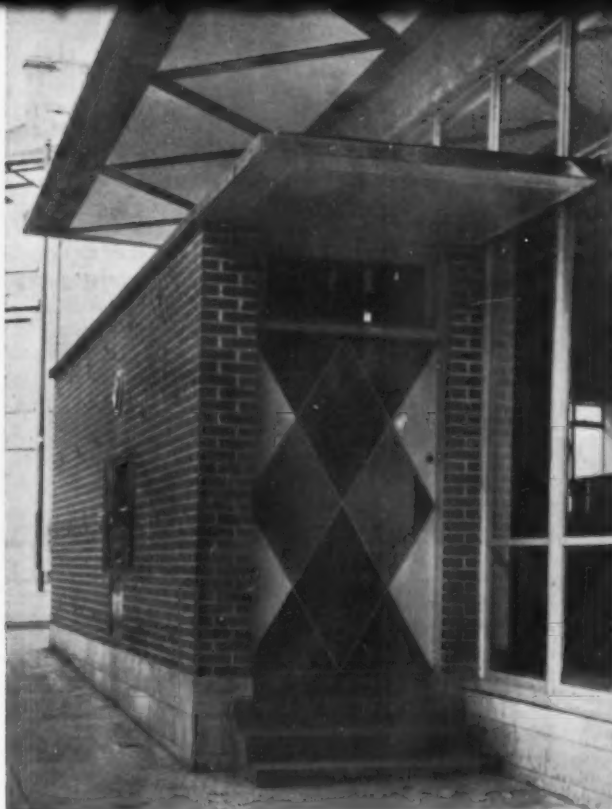
SECTION



## ***New Post Office St. Rollox, Glasgow***

### **Sub-Contractors**

Structural Steelwork: Donald Clerk & Sons  
 Pre-Stressed Roof Units: Concrete Ltd.  
 Ribbed Concrete Roof Units: Girlings Ferro Concrete Co. Ltd.  
 Asphalt Roofing and Tanking: Neuchatel Asphalt Co. Ltd.  
 Metal Windows: Crittall, Ltd.  
 Tile Work: Toffolo Jackson.  
 Diffulite Ceiling Panels: Metal Sections, Ltd.  
 Counter Grille and Posting Box: Kingston Brass Co. Ltd.  
 Steelwire Decoration: Thos. Hadden  
 Heating Engineers: Wm. Fleming & Co. Ltd.



embellished with paterae to correspond with the aluminium counter grills that surmounts it. The floor is of Cream Terrazzo with different colour marble triangular inserts repeating the note struck in the soffit, the canopy and the exterior door. Each wall of the Public Office differs in colour and treatment. That on the right hand is special inasmuch as it is of faience tiles which have been carried beyond the window to the outside and on which is a large steel rod sculpture applied, symbolic of Post Office activities. Throughout bright pastel shades have been used in the decoration.

The building was designed by Mr. Stewart Sim, D.A.(Edin.), F.R.I.A.S., F.S.A.(Scot.), of the Chief Architect's Division, Ministry of Works, Edinburgh. The Clerk of Works was Mr. J. Clark, the Main Contractors, are Robert Gilchrist and Son Ltd., 35/45 Barrland Street, Glasgow, S.1.



## Enamelled Sheet Cladding

"STEPHEN'S Inks," the characteristic advertisement in a rather gross script, sometimes accompanied by a gargantuan thermometer, seems to be associated with my early youth. It was usually found outside the newspaper and postcard shop round the corner from the seaside boarding house. They still survive, the thermometer usually broken, but the porcelain enamelled iron as good as ever after—what 30 years? There were others, Tangye Pumps. They stay in the memory because they were so sharp, self cleaning perhaps to some extent, the colours bright because of the glaze.

A few years ago someone drew attention to the durability of this finish, to the fact that these advertisements even if they were chipped did not seem to be disfigured by corrosion of the metal. No one has said whether this was because the metal was not the ordinary steel plate or because the chips did not expose the metal, the surface of the metal binding so closely with the glaze that a fine film of glaze was always left. Certainly these Stephen's Ink advertisements received no little "wear" as they were usually fixed at street level.

Similar advertisements, for someone's tea, were found as edging to overgrown garden beds in a friends cottage garden. Many years on the frost line had done no harm to them.

The Americans have taken up the proposition of this finish for claddings and a summary of the results to date appeared in the March issue of "Architectural Forum" for this year. Several examples are shown, all using steel sheet as the facing material either 16, 18 or 20 gauge, backed up with the usual wonderful variety of American insulating materials "paper honeycomb with perlite fill", cellular glass, fibrous glass, aluminium honeycomb, etc. These are made up into panels, the biggest being 7ft 10in  $\times$  3ft 3in, and are set in the curtain wall grid of metal mullions and transoms of varying complexity.

We are developing our own curtain wallings and the details of the sections shown here may be of interest to British manufacturers, but I think not to most architects who, concerned with the "one off" job, even if it is a large job, has to choose from one of the systems available.

Panels, however, being made up to suit the size, can more often be to the architect's particular requirements, and these panels are of particular interest in that way.

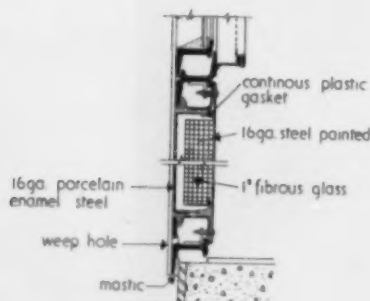
The particular points of interest seem to be concerned with stiffness and flatness. The thinner gauges require stiffening by means of a backing sheet of galvanized iron on asbestos cement or by relying on good adhesion to a rigid core of "fibrous" glass and a metal inner lining. Stiffening is also achieved by using a corrugated sheet as shown in details of the R.C.A. Victor Offices, Camden. This also overcomes the problem of getting the surface flat enough to avoid distorted light reflections which any bowing or waviness will give. This is presumably what the Americans call "oil-canning".

Reference is made to a guaranteed flatness of  $\pm \frac{1}{16}$  in which would certainly show. Another case where  $\frac{1}{4}$  in aluminium honeycomb backing and 2in cellular glass was used, is said to give "absolute" flatness. This would all seem to suggest that distortion of flat sheets is best accepted or corrugated or embossed sheets used. No mention is made of the use of colour patterns on the panels. This should nullify uneven reflection, and the design possibilities are immense and rather terrifying, but there may be difficulties of manufacture.

The other big problem is condensation within the panel. Some are sealed round the edges with special type tape (this is apart from sealing the panel in the frame) as the Hotel Statler, Hartford, in others the metal inner face is carried round and is sealed against the outer face with a gasket. Polyvinyl chloride gaskets are recommended. In these sealed cases it seems that vapour pressure may build up from sun's heat and split the facing from the backing unless relieved by vent holes. In the Hotel example this was done by a shoe string wick device which seems ingenious provided the erector knew what they were for and didn't snip them off.

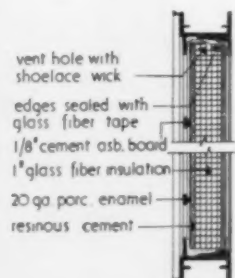
This problem of vapour pressure, ignored in some examples, does not arise in the panels which are specifically drained as in the Clemson College Barracks example.

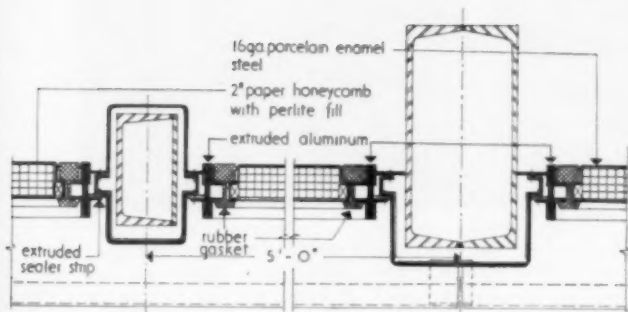
Some of the insulating fills are not affected by moisture so that vapour barriers in the unsealed examples are not necessary. These include foamed



A detail taken from a five storey dormitory building at Clemson college. Enamelled panels are insulated with a 1in fibrous glass core between two 16 gauge steel skins. Panels are  $1\frac{1}{2}$  in thick, weigh 8lbs per sq ft have a U-value of 0.197

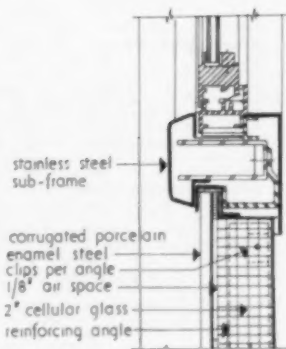
Porcelain-enamel panels from Hotel Statler, Hartford, are clipped to an aluminium frame and sealed with caulking compound. They are  $1\frac{1}{2}$  in thick, weigh  $5\frac{1}{2}$  lbs per sq ft and have a U-value of 0.2





Enamelled sheet cladding used in the curtain walling of the General Motors Technical Centre at Detroit. Panel sizes average 3ft 6in x 4ft 6in largest size is 4ft x 9ft 6in. The panel core consists of a 2in resin impregnated honeycomb paper filled with perlite insulation. The panels which are 2in thick weigh 6½lbs per sq ft have a U-value of 0.18

Corrugated enamelled steel forms the exterior skin of the infilling panels in R. C. A. Victor's offices, Camden. Panels are 7ft 10in by 3ft 3in with ½ in deep corrugations and are 2½in thick, weigh 6½lbs per sq ft and have a U-value of 0.15



glass, fibrous glass (presumably our glass fibre mats) and aluminium honeycomb. Others listed are paper honeycomb with and without perlite fill, cemented wood chips, vermiculite concrete and perlite concrete, presumably foamed. Pressed fibreboard is also given but is not good where condensation is at all possible. The insulation values show the glass types as best as would be expected and also not far from the lowest cost, which were of course the concrete types but these were the worst for insulation.

The sealing of these panels in the frame is done by caulking with mastic or by the gaskets referred to of polyvinyl chloride or neoprene rubber. The General Motors example uses this neoprene rubber gasket which has been described before. It seems a simple device and sensible provided it has a long enough life. These gaskets can perhaps be designed so as to insulate the metal of the panel from the metal of the framing and the external cover members from the internal ones. Heat loss by conduction through metal members in direct contact can be considerable. I believe it has been calculated that in a metal prefabric construction which had frequent mullions showing internally and externally, half the total heat loss was through these metal members. Some American examples now show the pressed or extruded metal sections backed up with strip insulation, but the avoidance of a direct path by conduction is not always so easy.

All these examples stand up to a 2hr fire test by American standards, the metal facing sheet having considerable advantage over glass or plastic sheet in this respect. There is no reason to believe that enamelled metal with these backings would not comply with the British fire test for the 2hr period.

The great advantage stressed in the Forum article is saving of weight. The cumulative effect on a skyscraper is of course considerable but it does not give much direct advantage in the case of 3 or 4 storey buildings and compared with other forms of cladding used now there would be little difference in weight as affecting the structure. The examples given weigh from 5lbs to 9lbs per foot super.

While the examples shown are all of enamelled steel, the article refers to enamelling on other metals, aluminium and stainless steel. Stainless steel for this is not commercially available but it is being developed as for certain purposes it may have advantages which make it economically justified. Aluminium has been used as a base for enamelling for the cladding of at least one building. It is more expensive and not so strong as steel but it has advantages in that the enamel coating can be thinner 0.75mm and it does not spall off when the enamelled sheet is drilled or cut; for steel sheets all working, drilling, etc., has to be done before enamelling. The aluminium sheet can also be pressed or cold rolled after enamelling to correct any distortions. These would seem to be great advantages. The aluminium used in America is 0.051in, barely ½in thick. The enamel coating stiffens the sheet considerably but it is obvious that it relies on the backing for the overall stiffness of the panel and adhesion to this backing is very important.

This article refers only to porcelain enamelling and speaks of the enterprise of the Porcelain Enamel

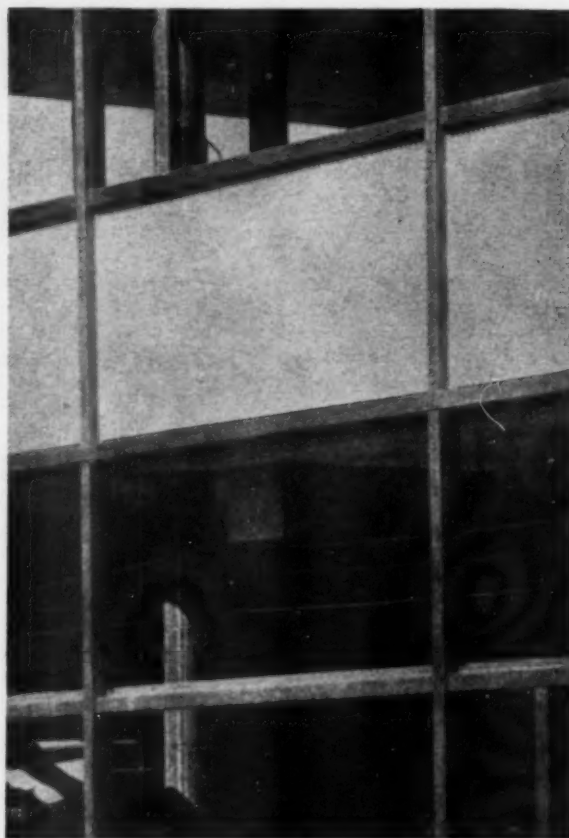
Institute as seeing the possibilities and actually financing development of a certain wall system which they got William Lescage to design for them. Advertisements in American journals refer to porcelain enamelling but not to any other type of finish such as stone enamelling, so presumably the porcelain has the market to itself. This is surprising as stove enamelling, which must be much cheaper, has been used to a limited extent on plastic sheeting for some time in England. These would seem to wear well as far as the short life of present examples show, but would not have the long life of porcelain enamelled iron.

The big enamelling plants in Britain one supposes are fully occupied with baths and similar products for which there is a large, steady and continuing demand, so that until special steps are taken for an important job or until someone lays out capital to produce a standard module-designed facing panel of enamelled metal, with a big advertising campaign to sell it, we will not see one here.

Enamelled metal panels to a quite small unit size about 3ft wide and 2ft high were used for an experimental station designed for the L.M.S. by Dr. Martin and Llewellyn Davies some time before the war and was re-erected in north-west London on the Bakerloo extension. These were a yellow colour and looked rather like farience blocks, but the idea was good and it was unfortunate that it was stillborn. A railway region could well develop such a material until it became practical and sufficiently known and in demand for general use.

A process is being developed in London for "stone enamelling", i.e. fusing stone particles onto a metal sheet. It is claimed that it gives very hard wear and is not so brittle as porcelain enamelling. Examples in actual buildings will be interesting when they appear.

DENZIL NIELD



R. C. A. Victor's Office Building. The corrugated enamelled panels are fixed from inside.

## MINISTRY OF WORKS—1955-6 WINTER LECTURES PROGRAMME FOR NOVEMBER

- **BOGNOR REGIS**—Good Practice in Plumbing, Tuesday, November 8, at 7 p.m. Speaker: R. T. Gillet, B.Sc., A.M.I.C.E., F.I.San.E., H.R.San.I., Senior Sanitary Engineer, M.O.W., at the Technical College, Southway.
- **YORK**—Vibration in Buildings, Tuesday, November 8, at 7.15 p.m. Speaker: R. J. Steffens, of B.R.S., at the Technical College, Department of Building, 159 Tadcaster Road.
- **IPSWICH**—Arbitration in Building Disputes, Wednesday, November 9, at 7.30 p.m. Speaker: Norman P. Greig, Barrister-at-Law, at the Great White Horse Hotel, Tavern Street.
- **LINCOLN**—Problems of Plastering and Rendering, Wednesday, November 9, at 7.15 p.m. Speaker: E. L. Westbrook, Research Department, Messrs. George Wimpey & Co., at the Technical College, Cathedral Street.
- **SOUTHEND**—Soil Mechanics in the Building Industry, Wednesday, November 9, at 7.30 p.m. Speaker: I. K. Nixon, Soil Mechanics, Ltd., at the Municipal College, Victoria Circus.
- **SOUTH SHIELDS**—Manufacture of Plate Glass and Armour Plate Glass, Wednesday, November 9, at 7 p.m. Speaker: A. Kearns, Messrs. Pilkington Brothers, at the Marine and Technical College.
- **BURTON-ON-TRENT**—The Importance of Moisture Content in Timber, Wednesday, November 9, at 7.15 p.m. Speaker: W. C. Stevens, of F.P.R.L., in Room 1, New Technical College.
- **HASTINGS**—Emulsion Paints, Wednesday, November 9, at 7 p.m. Speaker: G. W. Mack, of B.R.S., at the Town Hall, Queen Street.
- **CAMBRIDGE**—Soil Mechanics in the Building Industry, Monday, November 14, at 7.30 p.m. Speaker: I. K. Nixon, Soil Mechanics, Ltd., at the Board Room, Eastern Federation of Building Trades Employers, 95 Tenison Road.
- **CHATHAM**—Vibration in Buildings, Tuesday, November 15, at 7.15 p.m. Speaker: R. J. Steffens, of B.R.S., at the Medway College of Technology, High Street.
- **NORTHAMPTON**—Sewage Treatment, Wednesday, November 16, at 7.15 p.m. Speaker: R. A. Parker, Senior Sanitary Engineer, M.O.W., at the Carnegie Hall, Public Library, Abington Street.
- **BOLTON**—Modern Paint Developments, Wednesday, November 16, at 7.15 p.m. Speaker: I. W. Wilson, Leyland Paint and Varnish Company, at the Technical College.
- **WATFORD**—Dry Finished Interiors, Thursday, November 17, at 7 p.m. Speaker: H. G. Cooper, of B.R.S., at the Watford Technical College, Hampstead Road.
- **LOWER SYDENHAM**—The Repair of Dangerous Buildings, Tuesday, November 22, at 7 p.m. Speaker: F. L. Felgate, A.R.I.B.A., District Surveyor for Shoreditch, at the L.C.C. South East London Technical College, Department of Building, Worsley Bridge Road, S.E.26.
- **BOURNEMOUTH**—Latest Techniques for Electrical Installation in Small Buildings, Tuesday, November 22, at 7 p.m. Speaker: G. A. Wedge, Engineer, M.O.W., at the Bournemouth Municipal College of Technology and Commerce, Shelly Park, Beechwood Avenue, Boscombe.
- **BRADFORD**—Pipes and Pipe Laying, Tuesday, November 22, at 7.15 p.m. Speaker: N. W. B. Clarke, of B.R.S., at the Technical College, Great Horton Road.
- **DUDLEY**—Some Factors Influencing the Performance of Woodworking Machinery, Tuesday, November 22, at 7.15 p.m. Speaker: P. Harris, of F.P.R.L., at the Dudley and Staffordshire Technical College, Broadway.
- **GRIMSBY**—Dampness in Buildings, Wednesday, November 23, at 7.15 p.m. Speaker: J. P. Latham, of B.R.S., at the Demonstration Hall, Gas Showrooms, Osborne Street.
- **LIVERPOOL**—Soil Mechanics in the Building Industry, Wednesday, November 23, at 7.15 p.m. Speaker: I. K. Nixon, Soil Mechanics, Ltd., at the College of Technology, Byron Street.
- **HUDDERSFIELD**—Programming of Building Contracts, Wednesday, November 23, at 7 p.m. Speaker: C. N. Craig, of B.R.S., at the Technical College, Queen Street.
- **MANCHESTER**—Essentials of Good Concreting, Thursday, November 24, at 7.15 p.m. Speaker: E. H. Macmillan, Superintending Civil Engineer, M.O.W., at the Gas Board's showrooms, Town Hall Extension.
- **HALIFAX**—The Weathering and Deterioration of Concrete and Cement Renderings, Thursday, November 24, at 7.15 p.m. Speaker: C. Hobbs, Research and Development Department, Messrs. John Laing & Sons, at the Technical College, Hopwood Lane.
- **WEYMOUTH**—Application of Soil Mechanics to Buildings, Tuesday, November 29, at 7 p.m. Speaker: A. L. Little, Messrs. Binnie, Deacon and Gourley, at the South Dorset Technical College, Newstead Road.
- **MIDDLESBROUGH**—Protection of Timber Against Fungi and Insects, Tuesday, November 29, at 7 p.m. Speaker: E. H. Nevard, B.Sc.(Eng.), Chairman, Technical Committee, British Wood Preserving Association, at the Cleveland Scientific and Technical Institution, Victoria Road.
- **BIRMINGHAM**—Safety in the Building Industry, Tuesday, November 29, at 7.15 p.m. Speaker: J. A. Hayward, Superintending Safety Officer, John Laing & Sons, Ltd., at the Lecture Room, Ministry of Works Building, Ashley Street.
- **NEWCASTLE**—Preservation of Timber, Wednesday, November 30, at 7 p.m. Speaker: E. H. Nevard, B.Sc.(Eng.), Chairman, Technical Committee, British Wood Preserving Association, at the Chemistry Lecture Theatre, King's College, Victoria Road.

## Design and Execution

*Extracts from the Presidential Address given at The Architectural Association by BRYAN WESTWOOD, F.R.I.B.A., A.A.Dipl. on October 26*

**A**S a partner in a medium-sized firm I propose to look round at the architectural scene at this rather special moment of time and touch upon the facets which I find important, worrying, or interesting as the case may be.

In the wardroom of the "Formidable" after celebrating V.J. day in mid-Pacific, my friends said they envied my being an architect. "Architects are obviously to be all-important; rebuilt towns would incorporate all the newest ideas; planning would scotch the depredations of the speculating builder." The frustrations of the years that followed took quite a while to deflate that spirit. One was naive enough to have faith that advances, such as we have in fact seen in the Schools programme, would be general. One accepted the limitations imposed by the Planning Acts even to the extent of allowing the Law to become arbiter in matters of personal opinion and preference; a position from which it had been painfully dislodged in all other spheres of thought. In one's eagerness to help rebuild, in an orderly fashion, in an overcrowded land it was easy to overlook the impossibility of administering such an Act. A Scale of Fees for housing, patently unremunerative to a conscientious architect, was accepted, albeit grudgingly, in the same spirit of post-war renaissance.

That period has now passed. As always, things have not turned out as expected. Development Charges are almost forgotten but the proper use of land is an increasingly acute problem. The motor car has brought subtopia, but the shining vision of Planning has given way under force of circumstances to cynicism; designs for Local Authority housing have become stereotyped but probably not for long as the problem of garaging and parking motors in housing areas is bound to impose its own pattern on the plans of the houses themselves; the new schools have brought about a major revolution in the design of repetitive elements (so much so that I think the designing of a school has now become too much an organisational process); factories show the welcome effect of new engineering thought and greater attention to lighting and insulation; the designers of shops, bureaux and the like have imbibed the lessons of the Festival; building generally has become vastly more technical and the public more critical. Office buildings, with all the more important sites in the hands of Insurance or Property Companies, have hardly changed for 25 years; speculative houses seem not to have changed at all.

Such is the briefest sketch of the background to the architect's world at present. But what of the architect? What sort of a chap should he be? The answer to this question I find difficult to give, but it really constitutes the kernel of what I wish to say. I shall attempt to answer it by considering the vague figure which in my mind is identified with the word "architect", in relation to the other people and things which normally go to make up an architectural practice.

In his address last year, Peter Shephard quoted Max Bill and added his own thoughts on the frame of mind in which one should design. His words are there waiting to be re-read and it would be impertinent of me to try to improve upon them, but I would like to say how much I agree with him in insisting that the serious architect must set aside preconceived ideas. The building must grow from the increasingly detailed analysis of its needs, and particularly a study of the way people are expected to use

it and thence by the steady elimination of unsuitable materials and methods of construction. It is here, at this stage, in the manner in which he meets these requirements, that the true architect proves himself. I call to mind, for instance, the shock of pleasure produced by the sheer excellence of Professor Nervi's Exhibition Hall at Turin. This is surely a structure of which it can truly be said that nothing could be added and nothing taken away. It has elegance and grace and the fascination of concrete bones unfettered by the limitations of shuttering, it derives from the combination in one man of the Engineer, Architect and Builder. Genius such as this is rare, but we should all be able to contribute something. If, however, the designer is not a true architect and cannot weigh up the relative importance of the divers factors and come to a unique aesthetic conclusion, he quickly slips, via the handbooks, down the path to norms and optimum conditions.

It is important that the architect, dealing with smaller and more individual buildings, should get right into his problems. If after searching his own conscience he feels justified, he should be bold and ride his hobby horse as hard as his client will permit. Manfred Currey, the famous yachtsman, writing some years ago on racing tactics, pointed out that, unless you were over the line before the gun, say, once in every three or four times, your starting tactics were not up to standard. In the specially individual job, design will only have the necessary sense of tautness if it is poised very close to the line dividing what is acceptable and what is not.

I believe, since designers are human beings, that they must have the stimulus of carrying their client, or the general public, with them if they are to do their best work. One can see the effects in Italy of a more enlightened and appreciative public than we have here, in the willingness of quite humble people with small shops or village garages, to accept modern architecture, and their ability to discuss it. Here so often one has to waste a deal of time and lose initial enthusiasm in convincing clients of the wisdom of making a tiny step forward. Salt is then rubbed into the wound by further delays while the design is justified to the local planning officer, and in preparing material for Appeals, etc. In so many cases, the client cannot understand why you cannot do him the neo-Georgian, or in my experience, the Tudor, Office Block the Local Authority really wanted on the site. Why all this fuss and waste of time? What's wrong with Georgian anyway?

In such a situation one seems to be on the wrong foot all round. Looking at the recent architecture in the neighbourhood brings no solace at all. Everything is "in keeping". Oh that phrase! Banks, garages, offices, abattoirs or dog racing tracks all, when they can afford it, in the imagined image of the upper middle class house of two hundred years ago.

A sincere belief in modern architecture is indeed a handicap to easy success but signs of a more general appreciation of what it is all about are not so very far to seek. While it is true that some clients accept modern ideas simply because they are fashionable, there are younger men reaching board-room status who have been brought up with modern art and who have travelled widely around the world in search of business; men who do understand one's aims and intentions—sometimes one has an unexpected ally in the man who 'sposes it must be all

right because he has seen it done in America!

There is thus more chance of being allowed to carry out serious modern architecture than there was three or four years ago. But to give some impetus to the understanding of architecture in its widest sense among the members of the general public, our professional attitude towards advertising must be brought out into the light of day and examined in a forthright manner free from petty jealousy. At the moment we seem to be falling over backwards in our anxiety to hide our light under a bushel. One knows full well that some will benefit more than others from any new approach to this delicate subject. One knows also that the areas in which publicity can help us all must be clearly defined. But I feel strongly that at least some of our present difficulties would be cleared away if our approach to problems was better understood by the public. Not forgetting the modest but useful efforts of the R.I.B.A.; to approach an audience outside the profession, do we really have to leave the bulk of the pioneering on behalf of our learned profession to be done by women's magazines?

Perhaps a better understanding of how architects think and work may also one day speed up the committee system by which Public Authority work is administered. The slow process of waiting for Committee approvals of general drawings followed by similar delays at the detailed stage, and then the long consideration of tenders and finally the wait for a "Starting date" combine to knock the life out of the designing process and make it quite unnecessarily difficult to keep up interest and inspiration. One of the great advantages of working for the private client is that he will come to the office and go over the drawings face to face with architect and draughtsman, thus not only saving time and misunderstandings, but probably taking a lively interest and contributing to the success of the scheme. Above all, he will make decisions so that the tempo is not interrupted. The pressure and sense of urgency created in this way is a tonic. Hours cease to matter; any reference bearing on the problem is eagerly sought; taxi bills mount but the job has become an exciting and exhilarating experience. Unfortunately all too frequently the time allowed for drawing is too short in comparison with time on the site, but one does avoid the alternation of feverish bouts of drawing with heartbreaking periods of inactivity enforced while something perfectly simple waits for the approval of a distant and impersonal body.

Until the day comes when some form of training has been devised to produce what Nervi calls "The Complete Architect," engineers, builders and architects must strive towards better and better ways of literally working together. In the medium-sized jobs which come my way I like the engineer to work with me in a consultative capacity; to go along with me at an early stage in the design and take an integral part in the creative process. The antithesis of what I mean is that man who said, the other day, "You draw it out as you want it and don't worry about the engineering, we'll make it work." I want the man who can appreciate the sort of special effect required and who can advise on the best way of attaining it in engineering terms.

I can offer no useful advice on how best to work with heating and electrical consultants. I have not discovered the perfect *modus vivendi*; we still rather rub along together. In small jobs I endeavour to get sub-contractors appointed early and then work up the schemes in consultation with them. I think that their work should become much more part of the building than it generally is at present. There should not have to be so many light fittings, heating units, etc., fixed to the building. Many of these things by intelligent planning can be in instead of on the building. They should be taken into account at

the same time as the structural engineering. The greatest cause of friction between architect and heating consultants arises when the two do not work to the same standards. When, for instance, economy forbids even plaster on the walls but 6ft deep walking ducts are required for the heating mains.

I am satisfied in my own mind that, to increase efficiency, the main contractor's expertise must be used. I am concerned that the present system of Bills of Quantities and competitive tenders makes this virtually impossible by crystallising the design at too early a stage. Furthermore, the Bill of Quantities suggests, by its very precision, that nothing in the relationship between the Owner and Contractor is being taken on trust; a poor psychological basis if real co-operation is the aim. It makes impossible the sort of refinements of structure which arise from the actual method of building. Much of the excellence of Nervi's buildings arises from an acute awareness of this part of the building process. As a principle, I am convinced that the quantity surveyor has to play a new and different part and that the tender should be negotiated in the interest both of time and good workmanship. I do not believe that the cost of the work need be any higher.

If the contractor is unknown at the time that the specification is completed, in the interests of safety one tends to include nominated sub-contractors for a large part of the work. If the bulk of the work is thus prescribed there is only a limited scope for the contractor to be competitive. If, however, nominated sub-contracts are few, the job may suffer owing to the fact that the firms, to whom the main contractor sublets, have to get down to prices which preclude the standard of workmanship laid down in the specification. I am well aware that the architect has to approve sub-contractors, but in fact it is not possible to examine adequately the credentials of a large number of firms, probably none of whom are known to you directly.

As a result, one often has to accept inferior workmanship, the alternative being unacceptable delays in execution.

Starting with the client, it cannot be too strongly emphasized that a good brief is the essence of a good building. It is not a sufficient, in my view, to shelter behind clients instructions, written or otherwise, if they do not make sense, architecturally or financially. The general requirement that does not relate to the particular job; demands for mechanical equipment (and above all space around it) not compatible with the standard of economy imposed on the fabric of the building itself; insistence on a degree of flexibility which makes the building only partly suitable for the purpose for which it is required, or conversely so complicated by small differences in required dimensions that it is quickly out of date and unusable without costly alterations—these things, in default of the perfect brief, have to be resolved by the architect; he must be big enough to be able to do so.

The architect can perhaps make part of his contribution in the form of closer study of planning for economy of manpower. Full employment and comparatively high pay coupled with modest output have focused attention as never before on labour in relation to buildings. Not only the labour involved in putting them up, but in running them when in use. Bill Allen illustrated this in a recent talk, pointing out that the wages of a porter, when capitalised, were the equivalent of spending thousands of pounds on rearranging the layout of a building so as to make his employment unnecessary.

The client who analyses his building proposals in a really logical way may have a profound effect on the form and finish of the buildings themselves.

The "life" of a building is no longer a matter purely for academic discussion, but one which is beginning to appear in the client's brief to his architect. In designing shops, for instance, I am asked to base my scheme on a life of 25 years, with sufficient flexibility to allow superficial changes within that period. In this case it is argued that shops must look smart and attractive, despite very hard treatment by the public and by urban atmospheres, and therefore only the best materials are suitable. The cost of such materials has to be spread over a period of at least 25 years in order to be an economic proposition. Such a policy puts a brake on merely fashionable expression and has a salutary effect on design—incidentally, just where one would expect most to find emphasis on its more ephemeral qualities.

I have dwelt at some length on the "design" stage or that part of the complete process of building which has been neatly expressed as "the phase of ideas". I think one of the causes of the architect's shortcomings is that he has to combine such a variety of qualities. In very large offices, the principal may have little to do with execution but in the smaller ones even if he does manage to avoid the routine work he certainly has to get to grips with the difficulties of work on the site. This calls for quite a different set of qualities from those demanded for the production of a sensitive design. I cannot see how one can excel at the latter without a thorough, bottom-of-the-manhole acquaintance with the former. Since generally circumstances do not permit us to be architects and builders at the same time, it is during our site visits that we gradually acquire a feeling for building methods.

I think that most architects will agree that the hardest testing time comes during the later part of the period of execution. Design is a matter about which there will always be differing opinions, but poor execution is there as a fact for all to see. The architect's dilemma occurs when there is insufficient time to indulge in wide-spread condemnation of work (and indeed most of it is too nearly up to the standard to be rejected but is, nevertheless, sub-standard); when the sub-contractors are reluctant to fix valuable components because of damage and pilfering, but the general contractor does not want to put on the finishing coats of decorations, only to see them later covered with oily finger marks left by those fixing the components.

It is during this period that comic relief is so valuable—the condemnation of frosted brickwork interrupted by the sizzling of bacon and eggs being cooked in a shovel; a foreign client's criticism of one's choice of colour—based on the sight of a bucket of brown liquid being stirred by a labourer—cut short by the cry "Tea's up"; the clerk of works' comment on dirty streaks on a door under an up-tilted canopy: "There's a cult for slopes—you'll 'ave to grow out of it!" These pleasures are all too few. One is soon back to earth with the Quantity Surveyor pointing out that he notices much of the work is not up to the standards specified, and reminding one that everything should be of the best of its respective kind. The Contractor complaining that although he has offered highly improper rates to retain his craftsmen, they have gone off to a nearby job that is just started. The Client telling one that defects that he noticed last month are still there; you are painfully aware of slips and errors of judgement made by yourself and your staff. At this stage it will avail you little to be autocratic, tough, over-clever. You must park your small Popular—or large veteran—car among the sub-contractors' Bentleys outside the builders' hut, and wade into the site meeting determined to be fair and forthright. Your light armour will be lifemanship

and humour; your heavy armament—only to be used as a last resort—The contract.

At the present time there seems to be a determined effort by Public Authority accountants to knock away this main prop to the architect's authority. It began with arithmetical checks to accounts before honouring the Final Certificate; this in fact occasionally was justified. The next step was to inform the architect which items he must express as a lump sum and which as percentages. It was only a short step on, to the stage where the final certificate came back much battered and crumpled, for amendment as a result of a complete re-hash of the Quantity Surveyor's agreed final account. The last step is the draft agreement I received this month, for signature, in which a clause is inserted to the effect that the architect must not issue the final certificate at all until the accounts have been approved by the Clients' accountant. This cannot honestly be signed if the R.I.B.A. Contract or any similar one is used and indeed I firmly believe that with the widespread insertions of such a provision the architect's position *vis-à-vis* the rest of the building team would soon dwindle to that of a draughtsman with no say in contractual matters at all. His authority rests on his integrity being accepted as axiomatic. If there can be someone, other than a Court of Law, who can step in and upset the architect's and surveyor's considered judgement, their position is untenable and the contractual arrangements become a travesty of good order.

Being ourselves caught up in the midst of a period of rapid change, it is difficult even to generalise on the subject of training the future architect, so that qualities in him can be developed to meet the kind of professional life he is likely to have to lead, a few facets of which I have touched upon. A few days ago this subject was expressed in the following words:—

"To deal worthily with ever more ambitious architectural projects of the near future the architect must possess—and synthesise in himself—aesthetic sensibility, profound understanding of structural needs, and a precise knowledge of the methods, possibilities and limitations of constructional techniques."

The words, once again, are Professor Nervi's. I would only question the necessity for the word "Precise". To put my own feelings very simply, I would add that, although it is important to learn to draw (sometimes apparently overlooked) no form of cramming in subjects which might be thought to have a bearing on architecture should be countenanced at school; the accent being on the "Humanities" instead. That would-be architects, engineers or builders should all be kept together as long as possible on the road to the "Complete Architect" before going their separate ways. That the training should be continually related to first principles, but above all, since one's whole practice whether on the drawing board or on the site, is devoted to trying to seize on essentials, the architect should be taught logical thinking. There should be a non-technical side to architectural education devoted to the development of those qualities needed in order to deal easily and well with all sorts of people and to understand them better (if that can be taught)—fairness, tact and humour.

Finally, I think that the weight of his future responsibilities should not be allowed to cloud unduly the student's thought. It seems only natural that he should feel rather like St. Augustine before his conversion, when his awakening conscience prompted him to change his mistress for one less attractive and to write—"Give me chastity and continence—but not yet!"

## MOSAICS

### FITTINGS WASHING MACHINES C2/31



The No. 4005 washing machine by English Electric Co. Ltd., of Queens House, Kingsway, London, W.C.2 has a capacity of 10 gallons of water and 8/9 lbs dry clothing weight. The streamlined cabinet is of sheet steel and includes a storage compartment for the detachable wringer; the controls are mounted at waist height on the front panel. The wringer is driven by shaft from the main gear-box and may be positioned at eight radial angles from the tub. Rollers are 12in long x 2in dia, and safety release responds to up or down pressure of trip bar. Washing action is by central agitator of heat-resisting plastic. Automatic draining pump empties 10 galls. in 3½ minutes. Immersion heater: 3 kw. Voltage 200/220 and 230/250 volts. Dimensions: 36in high x 21½in wide x 23in deep. Finish: white or cream stoved enamel. Model No. 4004 without immersion heater also available.

### SERVICES WATER HEATING B6/37



The "Bilston" dual-purpose domestic boiler is manufactured by Bilston Foundries Ltd., of Highfields, Bilston, Staffs. By convection cold air is drawn in through the base and warm air emitted from the top but convection may be cut off to prevent overheating in summer. Constructed from cast iron sections with pressed steel vitreous enamelled outer sides and front. Suitable for a water cylinder of 30-40 gallons capacity. The circular rotating grate can be lowered for removal of unburnable material. Suitable for coke, anthracite, dry steam coal and most manufactured fuels. Fuel capacity: 0.75 cu ft. Available in colour finishes of ivory, white, green, pink or blue. Dimensions: 24½in high x 16½in wide x 15½in deep.



### SERVICES LIGHTING FITTINGS B1/91.

In the new "Dustproof Fluorolite" lighting fitting by Benjamin Electric Ltd., of Tottenham, London, N.17, internal wiring, gear and contacts are sealed off to prevent penetration of dust between brass lampholders and the lamp. It consists of two housings connected by a tube, all of cast aluminium alloy. Switch or instant start auxiliary gear can be accommodated in the housings. The bottom cover of each housing is in two sections, one carrying a moulded rubber cover protecting the lampholder and wires and the other being removable for the installation of suspensions. One end of the rubber cover houses a brass B.C. lampholder and makes a seal on the tube; the other end enters one section of the bottom cover, making a continuous seal between tube and gear housing. Designed for "Benjamin" standard reflectors for 1 x 80 watt, 5ft tubes closed top or upward light. Finish: white "Crysteel" vitreous enamel of "Peropal".



### FITTINGS OFFICE FURNITURE C5/9.

The "Alerco" portable steel safe has a built in burglar alarm which works on a flat 4½ volt battery. The lock is of the cylindrical type and the alarm is set by turning the key to the left. If anybody attempts to lift the box, or even move it, the hidden bell immediately commences to ring and the alarm will continue for 8 hours unless it is stopped by the holder of the key. The safe measures approximately 12in x 8in x 4in and weighs 12lbs. Steel gauge is 2 millimetres. Sole importers in the U.K.: Riso Trading Agency of 377 St. John Street, London, E.C.1.

## INDUSTRIAL NOTES

● Following the Annual General Meeting of the Prefabricated Building Industry Executive Committee, Mr. Newsum, who has acted as Chairman for the past year, resigned, and the Chairman for the current year was elected, together with new Members of the Committee which for the ensuing twelve months is constituted as follows:— Chairman, Mr. Bernard Brunton (Seco Limited); Deputy Chairman, Mr. R. A. Newsum, M.B.E., T.D. (H. Newsum Sons & Co. Ltd.); Mr. W. W. Gardam Mod-X Structures Ltd.; Mr. G. J. M. Blackie (W. J. Simms Sons & Cooke Ltd.); Mr. D. R. Stanley-Adams (Maycrete Limited); Mr. G. H. Burgess (G. H. Burgess & Co. Ltd.); Messrs. Peat, Marwick, Mitchell & Co. were appointed as Secretaries, and all communications should be addressed to them at 11, Ironmonger Lane, London, E.C.2., Post Office Box No. 39, and marked for the attention of Mr. Walker. Telephone Number: Monarch 8888.

● D. Anderson & Sons Ltd., announce that Mr. Denis H. Reid has been elected Director with duties as Assistant to the Managing Director.

● New forms of Dunlopillo are anticipated in "Dunlop Research" published by the Dunlop Rubber Company this week. "Current Dunlopillo developments," it states, "point to new applications, new compounding ingredients and processes, the possibilities of synthetic foams, and production techniques that will make this remarkable material a commonplace of domestic and public comfort."

● The directors of Crabtree Electrical Industries Limited are recommending the payment of a Final Dividend of 12½% less Income Tax upon the Ordinary Shares, this together, with the Interim Dividend of 7½% less Income Tax paid March 31st, 1955, will make a total distribution of 20% less Income Tax for the year ended July 31st, 1955, which is the same as last year.

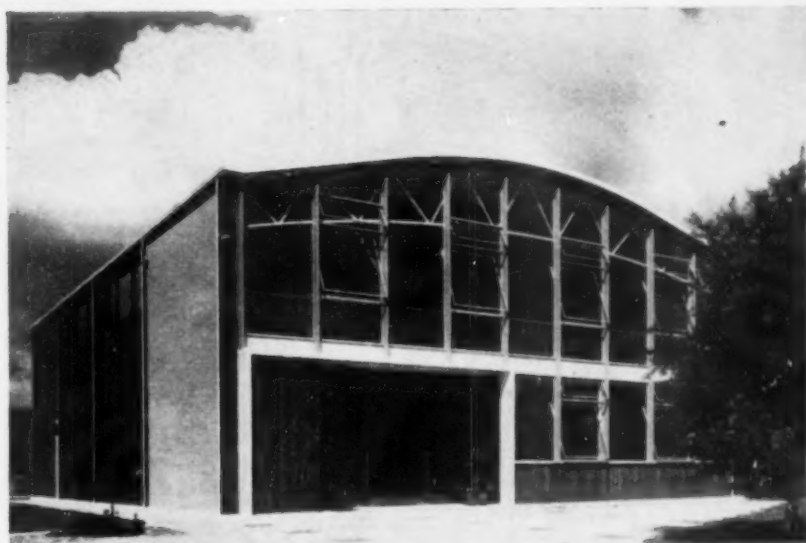
● The Forster Perspektiv - Automat, a new perspective drawing machine will be shown at the Building Exhibition on stand No. 601A, in the Empire Hall gallery.

● H. C. Janes Ltd., joinery manufacturers, of Barton, Bedfordshire, are now marketing what is probably the most extensive range of standard timber door and window frames ever offered to the architect and builder.

Their "Modolite" contemporary windows, for example, have a narrow and a medium width window in addition to the normal standard width, for each of the common standard sizes; with the further advantage of a number of alternative fanlight sizes being available in each case. Combinations of these two factors has made possible an extensive range of windows at a standard price and in a variety of styles.

### CORRECTION

● The 16 mm. colour film "Mechanical Handling on Show," mentioned in our issue of October 20, is available free on loan from *Mechanical Handling* at Dorset House, Stamford Street, S.E.1, and not at the address published before.



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*Lecture Theatre*

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# CURRENT MEASURED RATES (LONDON)

These apply to new work of normal character and some size. These rates are for time and materials only and carry 10 per cent in excess, so the appropriate material on-costs should be added. The basis cost of material used in the calculation of these prices is taken from the foregoing tables which carried up to October, 1955.

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## ESSENTIAL ON-COSTS

Fees payable to L.C.C. for District Surveyor:	
For new buildings of ordinary construction exceeding 5,000 cubic feet, for every 1,000 feet or part of same up to 1,000,000 cubic feet 1/6, together with an additional sum of £1/10/-	£1/10/- at + 1/6
After which allow per 1,000 do.	at + 9d.
For alterations and additions:	
When £100 the sum of £2/10/-, plus 12/6 for every £100 or part of same, up to £1,000	£2/10/- at + 12/6 per 100
When over £1,000 the sum of £8/2/6, and for every £100 or part of same beyond 3/-	£8/2/6 at + 3/- per 100
Public buildings: Fees as above but plus 50%	+ 50%
Fees in respect of means of escape in case of fire are 1/5th of the above or £2 if greater or in the case of a one-storey building £1	1/5th
Steel framed or r.c. buildings double	+ 100%

Allowance to cover National Insurances, Holidays with Pay and Public Holidays, Welfare, Third Party Risk, Travelling and Guaranteed Week is made in the rates attached to the items.	
Allow for Fire Insurance do.	1/6%
Allow for Water for use on the works and apparatus do.	6/6%
Allow for hoarding, or similar licences in City of London say £10 Do. under Borough Councils per each month	say 2/6
Allow for Office, Fire, Attendance on C. o. W., etc. p. week say £1	

Supervision, etc., assessment	Contract value				
	£4,000	£6,000	£12,000	£24,000	£50,000
Cost. of admin. ..	6%	5%	5%	4½%	4½%
Agent or foreman (each) ..	5%	4½%	3½%	2½%	1½%
Timekeeper or Watchman (each)	2½%	2½%	1½%	1%	½%

SPOT ITEMS AND DEMOLITION, ETC.	Per foot run
Hoarding erected and removed ..	18/-
Planked gangway with handrail, etc. do.	9/6
Proper gantry do.	70/-
Sleeper roadways ..	15/-
Needling, strutting and shoring including all labours and use and waste in erection and removal	Per foot cube 18/-

ALTERATION-DEMOLITION—	1 Brick	1½ Brick	2 Brick	Per yard cube
Cutting out cement concrete or brickwork in small quantities ..	1/3	2/4	3/2	57/-
Do. if either in very small quantities or reinforced ..	2/1	3/8	5/3½	84/-
Debris into baskets and removed from inside to outside of bldg. ..	3½d	7d	8½d	12/2

SCAFFOLDING (Avg. 45ft high)	Period	
Per yard superficial	1 month 3 months 5 months	
Putlog type—4' 6" lift ..	5/6	7/6
Do. —6' 0" do. ..	4/1	5/8
Independent type—4' 6" lift ..	7/1	10/3
Do. —6' 0" do. ..	5/1	7/4

EXCAVATION	Common Soil	Loamy Clay	Gravel or Clay	Rock or similar
Per Yard Cube. By hand ..	5/7	6/9	7/11	53/-
Reducing levels ..				
Surface trench not exceeding 5ft deep ..	11/7	13/10	18/6	66/-
Do. from 5ft to 10ft ..	21/3	23/11	28/7	72/-
Do. from 10ft to 15ft ..	26/5	29/1	33/7	79/-
Fill in and ram ..	4/7	5/1	5/1	5/1
Barrowing 25 yds ..	2/8	2/11	2/11	3/4
Load vehicles and tip 8 miles away ..	15/-	15/-	15/10	16/6

PLANK AND STRUT	To 5ft deep	5 to 10ft deep	10 to 15ft deep
To trenches, in normal ground	5½d.	6½d.	8d.
Per Foot Super ..			

CONCRETE	1½in Ballast Aggregate	Per yard cube
1:3:6 Cement concrete in foundations ..		72/6
Do. around grillages ..		75/6

REINFORCED CONCRETE	
1:2:4—½in concrete, worked around reinforcement, between formwork in the following (at various levels):—	
Foundations and surface beds ..	80/- Per cubic
Walls, 12in thick or more ..	86/6 Yard

Sectional	Lintols and	Columns and	Braces and
inches	beams	casings	projections
Up to 36 ..	4/3	4/6	4/8 Per cubic ft
36 to 72 ..	4/-	4/4	4/1 do.
72 to 144 ..	3/10	3/11	4/1 do.
over 144 ..	3/8	3/10	4/- do.
Walls 6in thick ..			16/4 Per super yd
Do. 9in thick ..			24/6 do.
Suspended floors average 6in thick			17/3 do.

REINFORCING RODS (round) bent and placed—				
Per cwt	½in	¾in	1in	1½in
In floors and beams ..	79/-	72/-	67/-	61/-
In walls ..	84/6	76/6	70/9	64/-
In columns ..	90/-	81/-	74/6	67/-

FORMWORK and Supports (4 times use)—				
Floor soffits	Beams	Walls	Columns	
18/3 per Yard	2/5	2/3	2/3 per super foot	

BRICKWORK	
BRICKWORK per YARD superficial reduced on ONE BRICK in thickness (scaffold to add)—	In 1:3 cement mortar
Flettons or other similar at 113/- per 1,000 ..	38/8
Mild Stocks or do., at 226/6 per 1,000 ..	52/4
Second Stocks or do., at 261/- per 1,000 ..	56/1
Southwater engineering or similar bricks, at 379/- per 1,000 ..	72/5
Glue Staffordshire wire cut at 510/6 per 1,000 ..	86/3
Deduct if 1:1:6 Cement-Lime mortar is used in lieu of 1:3 Portland Cement mortar ..	2d
Add if brickwork commences above ground level	3/11
Do. if in backing to masonry including cutting and waste for bonding ..	3/-
Do. If circular-on-plan ..	7/1
Do. If in underpinning ..	7/1

BRICKWORK IN THICKNESS NOT REDUCED—				
Per yard superficial	Brick, on edge	Half-Brick	1 Brick finished fair both sides	11" Hollow with 2" cavity and G.I. ties
In Flettons or similar	16/7	21/2	39/2	44/9
In second stocks or do.	21/11	29/-	54/2	60/-
Add: for pointing as work proceeds, per side ..	1/7	1/9	1/7	1/7
Thickness to old walls, including cutting, toothing and bonding to same an average total thickness of ½ brick ..	55/-		65/5	Per yard super do.
Do. all as last but an average total thickness of 1½ bricks ..	71/8		93/9	

WALLS BUILT IN SUPERIOR BRICKS—			
In 1:3 Cement mortar, fair faced and pointed on both sides as the work proceeds:—	Half-Brick	One Brick	
In first quality Stocks at 282/- ..	35/6	63/1	Per yard super do.
In red facings at 310/- ..	35/3	63/-	
In bluepressed facings at 562/- ..	55/8	97/-	

GENERAL AND SUNDRY—	
Cut tooth and bond new brickwork to old ..	4/7 per ft
Damp proof course, double slate, horizontal ..	3/3 super
Do., as last, but vertical ..	4/- do.
Do., bitumen, Hessian base, do. ..	1/9 do.
Frames, bed and point in cement mortar, one side 4½d per ft run	
Window board of 6"×6"×½" rounded on edge	
quarry tiles, bedded, pointed, cut and fitted ..	3/2 do.
Terra cotta air bricks built in and pointed, including flue ..	9"×6" 9"×9" 5/3 9/6 each
Chimney pots, plain red, set and flauched in cement mortar	1ft high 2ft high 13/6 19/9 each
Metal windows, assembled, hoisted and fixed, lugs cut and pinned and frames bedded and pointed one side in cement mortar ..	Up to 5ft super 5ft to 10ft super 11/10 14/10 each
	10ft to 20ft super 20ft to 40ft super 23/- 38/- each

Leaving holes through walls for pipes and afterwards making good ..	Small pipes 3d per in in depth 10d do.	Large pipes 6d per in in depth 1/8 do.
Cutting do., and afterwards do.		
Cut mortices in brickwork or concrete for bolts or dowels and run in with cement grout		1/1½ per in in depth, each
Holdfasts of stout iron hoop bent holed and screwed to frame and built in ..		1/3 each

**MEASURED RATES—Continued****BRICKWORK—Continued****FACING—**

Extra only over common brickwork (113/- per 1,000) for facing with superior bricks in *Flemish bond* and pointing as the work proceeds.

Rustic Flettons (138/-)	3/9	per yard super
White (210/-)	9/9	do.
First Stocks (282/-)	15/-	do.
Reds (310/-)	16/6	do.
Blue pressed (562/-)	34/10	do.

If built in English bond, Add 12½% to above

If do. half-brick stretcher bond, Less 25% off above.

**COPING—**

All labour and material in forming brick-on-edge coping with two course of roofing tiles under and cement weather fillets on both sides, built in cement and pointed as the work proceeds.

Per foot run	9" thick	14" thick
In picked Flettons	6/3	8/5
In first quality Stocks	7/7	11/1
In red facings	7/5	10/11

Plumbing angles	2d.	per foot run
Fair cutting	11½d.	do.
Fair raking cutting	1/6½	do.
Fair circular cutting	1/6½	do.
Fair squint or birdsmouth	1/10½	do.

**ARCHES**

Extra over Fletton brickwork for forming window head with red facing bricks set on end and with 4½" soffits and pointing	foot run
Do. for rubbed and gauged flat arch in red rubbers set in putty with fine joints	18/-

**PARTITIONS**

	2in	2½in	3in
Concrete slab partitions in cement mortar (over 100 Yards)	10/6	11/11	13/11
Hollow clay do.	12/4	13/3	14/9
Cutting and bonding at angles, intersections and ends	5d.	foot run	

**PAVING**

	lin	1½in	1½in
Grano trowelled gauge 5 : 2	8/-	9/-	10/-
1 × 5in skirting, square top and cove bottom	2/8	foot run	
½in × 6in red quarry tile paving	28/-	yard super	
½in × 6in do. skirting	1/10	foot run	
Jointless flooring, ½in thick	20/-	yard super	

**ASPHALT (normal conditions and fair quantity)**

	B.S.
½in pitch mastic floor in one coat on felt underlay on prepared concrete base	1450/48
	1375/47

	Unit	Brown B.S.988	Red Mastic Natural Rock B.S.1162/44
Per yard super	12/6	13/2	15/-

½in in two thicknesses on felt underlay on prepared concrete base	yard super	17/-	22/6
Do. in narrow widths	foot super	2/6	3/6

½in skirting 6in high, angle fillet at bottom splayed and turned in at top	foot run	3/-	3/6
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External angles	each	6d.	6d.
Internal ditto	each	10d.	10d.

Tanking or Damp Course	B.S.1097/43	B.S.1418/47
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Vertical in two thicknesses	yard super	22/6	32/-
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½in horizontal ditto	yard super	15/-	23/6
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Vertical in three thicknesses	yard super	32/-	39/-
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1½in horizontal ditto	yard super	21/-	30/6
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Labour rounded external angle	per foot run	6d.	6d.
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Ditto internal angle fillet	per foot run	10d.	11d.
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Ditto double ditto	per foot run	1/8	1/8
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Collars to small pipes	each	3/6	4/-
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Ditto to large pipes	each	6/6	8/-
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Per lineal yard	1 foot in depth	4/4
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Excavate trench, and plank and strut to sides, consolidate bottom to fall, return fill and ram earth after drain is laid and load and remove surplus.	2 do.	7/6
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In ordinary ground—moderately firm	3 do.	17/8
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	4 do.	23/7
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	5 do.	29/4
--	-------	------

	6 do.	39/6
--	-------	------

	7 do.	48/-
--	-------	------

	8 do.	61/-
--	-------	------

	9 do.	71/-
--	-------	------

	10 do.	86/9
--	--------	------

	11 do.	98/5
--	--------	------

	12 do.	111/-
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Portland cement (1 : 6)	Per yard run
concrete bed under drain	4in 6in 9in
pipes and benching up on 18in wide	20in wide 23in wide
both sides—6in thick	5/7 6/6 8/1½

**SALT GLAZED SANITARY DRAIN PIPES**

and lay and joint with Yarn and Cement Mortar in trench.

	Quality	Quantity	4in	6in	9in
"Best"	2 Tons or more	3/1	4/3	7/2	
	over 100 pieces	3/4	4/9	8/-	
	under 100 ditto	3/5	4/10	8/4	
"Best Tested"	2 Tons or more	3/9½	4/11	9/-	
	over 100 pieces	4/3	6/3	10/4	
	under 100 ditto	4/4	6/6	10/8	
"British Standard"	2 Tons or more	3/3	4/10	7/7	
	over 100 pieces	3/8	5/5	8/7	
	under 100 ditto	3/9	5/8	9/4	
"British Standard Tested"	2 Tons or more	4/-	6/-	9/9	
	over 100 pieces	4/7	6/11	11/2	
	under 100 ditto	4/10	7/2	11/10	
Extra for bends "Best"	Contained in 2 Ton lots.	4/2	6/3	16/6	
Extra for junction "Best"	—4in on 4in, 6in on 6in—9in on 9in	ditto	6/6	9/9	27/-

**IRON DRAIN PIPES—**

	Per foot run
Heavy cast iron socketed and laying and jointing in molten lead—	4in 6in
In main runs	12/- 16/3
In branches	13/4 18/3
Extra over last for bends and extra joint	36/- 71/4
Do. on do. for junctions and extra joint	48 2 89/7
Cast iron gully with 10½in inlet and 4in outlet, composed of hooper and trap, and 9in extension piece and 10½in grating, and jointing all together, and jointing to drain and surrounding in concrete	162/-
Do. rain water, shoe with vertical inlet and inspection cover, and joint up and embed	84/2 128/-

**MANHOLE SUNDRIES—**

	4in	6in
Salt glazed straight half-round main channels	5/-	7/-
Do. curved	10/6	15/-
Do. three-quarter section splayed channel bends (Barrons or similar)	14/3	20/8
Heavy manhole steps galvanized	9/9	
Fix only manhole covers	11/-	
4in Mica flap, brass faced, f.a.i. valves and fix with molten lead joint	38/6	

**ROOFER****CORRUGATED ASBESTOS SHEETS**

P.C. 6/8½ per super yard, including side and end laps and fixing to wood	135/6 per square
Eaves filler pieces	1/9 foot run
Adjustable ridge	3/4 do.
Barge boards	2/8 do.
Plain roofing tiles, machine made, sand faced, 4in gauge nailed every 4th course with 1½in galvanized nails, to battens (measured separately)	245/- do.
Extra over last for top edge or abutment cutting	1/3 do.
Do. for double course at eaves	2/5 do.
Do. for verges, undercloak, bed and point	3/6 do.
Do. Valley tiles including cutting and waste on both sides	11/- do.
Do. Bonnet hips and do. bed and point	11/6 do.
Half-round ridge and bed and point	3/3 do.
Fixing soakers	1/6 dozen

Bituminous felt roofing in two layers, laid breaking joint and bedded with hot mastic and finished with fine dry grit	11/- yard
Do. but in one layer only	8/- super

WELSH SLATING	16" × 10" 18" × 10" 20" × 10"
3in lap, 2 zinc nails to each slate	297/- 303/- 354/-

Additional labours	Per foot lineal
At tops, verges and abutments—straight	1/6 1/8 1/10
Do. —raking	2/3 2/6 2/9
At hips and v. :leays (each side)	2/3 2/6 2/9
At eaves, double course	3/- 3/3 3/8
Do. to falls	4/6 4/10 5/6

# VYDOK DOCKERLUX

**VYDOK**  
The Perfect  
Emulsion Paint  
in matt and  
eggshell finishes



**DOCKERLUX**  
The finest  
Gloss Paint  
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on the Fourth Floor, Time and Life Building W1

Architect:  
Michael Rosenauer F.R.I.B.A.

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to  
divide . . .



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Telephone: GLAdstone 6633 (3 lines)



## A WINDOW in GLASCRETE

*Reinforced Concrete and Glass*

This attractive entrance to the new premises of Messrs. De Grave Short & Co. Ltd. at St. Mary Cray shows the adaptability of GLASCRETE GRID WINDOWS.

Construction Type 608

Messrs. Fairtlough & Morris  
Chartered Architects

Data, applications and possibilities of Glascrete are given in our interesting Brochure P47, which we shall be pleased to send on request.

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LTD

151 Queen Victoria St. LONDON E.C.4

Telephone: CENTral 5866 (5 lines)

## MEASURED RATES—Continued

## FLOORS AND FLATS

Hollow tile in situ or precast units hoisted, bedded and fixed— Superimposed load			
in lb per foot super		Span	
		12 feet	16 feet
Per yard super	50 ..	45/-	51/1
	100 ..	46/9	54/-
	150 ..	50/6	57/6

20lb has been allowed to cover dead load in surface, finish.  
Fair edge to slabs .. .. . 9d. per foot run  
Splay cutting and waste .. .. . 1/9 do.

## CARPENTER AND JOINER

## SOFTWARE CARCASSING—

per foot cube—			
Labour, materials, waste nails, hoisting and fixing ..	Plates	Joists Rafters	Trusses

	18/9	20/-	21/6	24/-
--	------	------	------	------

FLOORING—	Per square—	1/2 in	1 in	1 1/2 in
Rough boarding ..		131/-	161/-	198/-
Softwood batten flooring, straight joints, splayed headings ..		132/7	162/6	200/-
Do. grooved and tongued ..		162/-	192/6	237/-

SKIRTING—	Per foot superficial—	1/2 in	1 in	1 1/2 in
Wrot softwood moulded skirting with grounds and backings plugged ..		3/6	4/1	4/8
Mitres to do. ..	3d. per sectional inch			
Fitted ends ..	2d. do.			

## SASHES, fanlights, casements, borrowed lights, etc.—

Per foot super—		Without bars	With bars (2ft sup. in each square)
2in softwood rebated, moulded and fixed ..		3/-	5/3
Add if fitted with beads ..		6d.	1/6
Add if hanging on butts ..		2/3 each	

## WINDOWS, hung on lines—

Softwood casement frames, 1in inner and outer linings, 1 1/2 in pulley stiles, 2in sashes, oak sill ..				
Overall size of frames—				
Per foot super ..		6ft	21ft	32ft
Windows as described ..		17/7	9/8	7/6
Add if sashes in squares, about 2 feet super in each ..		—	1/6	2/-
Extra for hanging sashes with lines, weights and axle pulleys ..		30/6	50/-	62/-

## FINISHINGS TO OPENINGS—

Softwood linings, tongued at angles and tongued to frame including grounds and backings ..				
Per foot super—				
		1/2 in	1 in	1 1/2 in
Add if crosstongued ..		6d.	6d.	6d.
Softwood wrot rounded on front edge and with tongue at back window board including groove in sill and bearers ..		3/4	3/9	4/8
Add for ends to last notched, returned and rounded ..		1/1	1/2	1/3

Per foot run—		Sectional area in inches—					
		1	2	3	4	5	6
Softwood wrot and fixed in bearers, backings, grounds, fillets, and similar ..		3 1/2 d.	6d.	8 1/2 d.	11d.	1 1/4	1 3/4
Add if in short lengths ..		2d.	2d.	2 1/2 d.	2 1/2 d.	3d.	3d.
.. if plugged to brickwork ..		4d.	4d.	4d.	4d.	4d.	4d.
.. if framed as in legs and bearers ..		3d.	3d.	4d.	4d.	6d.	6d.
.. if rebated or grooved or beaded ..		3d.	3d.	3d.	3d.	3d.	3d.
.. if chamfered or rounded edges ..					1 1/4 d.		
.. if moulded in architraves, capping, etc. ..					3d.		

## DOOR FRAMES—

Per sectional inch—		6in	8in	10in	12in	13 1/2 in
Softwood, wrot, rebated, rounded framed and fixed ..		2/1	2/5	2/11 1/2	3/3 1/2	3/6

## DOORS—Per foot super

2in Softwood square framed and flat panels, both sides, on butts ..		1	2	3	4	5	6
1 1/2 in do. ..		5/6	6/6	7/-	7/9	8/-	8/9
Add for each side moulded ..		4/8	5/6	6/-	6/7	6/10	7/4
Add for do. flush panelled ..		8d.	8d.	8d.	8d.	8d.	8d.

per foot super—			
	1/2 in	1 in	1 1/2 in
In shelves, table tops, wrot and fixed ..	2/4	2/7	3/-
Do. in divisions and ends framed ..	2/7	2/10	3/3
Add if crosstongued ..	6d.	6d.	6d.
Add if buttoned ..	6d.	6d.	6d.

## SUNDRIES—Per foot run ..

In short lengths		In long lengths	Add for cups and screws
Glazing, beads mitred around and fixed with brads ..	6d.	4d.	2d.
Rounded heel or hollow ..		4d.	
Tongued and grooved angle ..		6d.	
Glue blocking ..		6d.	
Mitres ..	3d.	per sectional inch.	
Fitted ends ..	2d.	do.	

## STAIRCASE—

1 1/2 in Softwood treads with moulded nosings, 1in risers tongued both edges and glued, blocked and bracketed on and including two fir framed carriages ..		Per ft Super
Do. but in winders ..		5/3
1 1/2 in crosstongued landing on framed carriages ..		6/6
2in moulded string ..		5/3
2in do. ramped ..		5/-
Ends framed to newel ..		11/6
Tongued and mitred angles ..		9/6 each
Tongued heading joints ..		5/3 do.
Ends of treads and risers housed to string ..		3/6 do.
Extra for curtail ends to steps, glued up and veneered riser and solid blocking ..		100/- do.
Balusters about 2ft 9in long, square and framed each end ..	1in	1 1/2 in
3 1/2 in x 3 1/2 in square newel, framed ..	each	4/4
African mahogany moulded 3in x 2in hand-rail. (Joints below) ..		4/11
Do. ramped 18in girth (do.) ..		8/9 do.
Do. wreathed do. (do.) ..		52/- each
Joint or framed ends ..		155/- each

## FIXING ONLY IRONMONGERY

	To deal	To hardwood
Barrel bolts ..	1/8	2/6 each
Flush bolts ..	4/-	4/10 do.
Sash fasteners ..	3/2	2/10 do.
Rim locks and furniture ..	5/4	6/9 do.
Mortice locks and do. ..	10/9	16/9 do.
Cupboard locks ..	2/9	3/5 do.
Casement fasteners ..	2/3	2/9 do.
Do. stays ..	2/3	2/9 do.
Grip handles ..	2/7	3/5 do.
Spring catches ..	2/3	2/9 do.
Cabin hooks ..	1/10	2/5 do.
Floor springs including oil ..	46/-	58/- do.
Overhead springs ..	13/8	16/- do.
Springhinges ..	10/9	13/- do.

## SMITH AND FOUNDER

Basis framed steel joists and hoist and fix ..	69/- per cwt.
Do. but in compound girders ..	79/- do.
Do. but in stanchions ..	80/- do.
Trusses ..	110/- do.

Additional cost per cwt. over basic sections for following R.S.J.s

9in x 7in, 10in x 8in, 12in x 8in, 14in x 8in, 16in x 8in, 18in x 6in, 18in x 7in, 20in x 6 1/2 in, 20in x 7 1/2 in ..	7d. per cwt.
22in x 7in, 1/1 cwt., 4in x 3in ..	1/8 do.
5in x 3in, 5in x 2 1/2 in ..	2/- do.
6in x 3in, 24in x 7 1/2 in ..	2/3 do.
3in x 3in, 2/9 cwt., 4 1/2 in x 1 1/2 in ..	3/7 do.
3in x 1 1/2 in ..	3/11 do.
Cleats, brackets, packing pieces, etc., in connections, including rivets and bolts ..	154/- do.
Forged straps ..	112/- do.
Wrot iron balustrade ..	150/- do.

## RAINWATER GOODS—

Round cast-iron pipe with socketed joints caulked with red lead and tow and fixing with pipe nails and gas barrel distance pieces to plugs in brickwork ..	Per foot lineal
Extra for shoes ..	2in 3in 4in
Do. junctions ..	3/11 4/4 5/6 1/2
Do. bends ..	5/3 6/8 9/7
	7/11 10/1 14/7
	6/2 7/11 10/2

## RAINWATER GUTTERS

Per foot run—	4in	5in	6in
Half round CI gutters jointed in red lead and bolted and fixed on iron brackets ..	3/7	4/4	5/4
Ogee do. All as last ..	4/1	4/9	5/11
Extra for stop ends ..	3/2	3/10	4/5
Do. angles or outlets ..	5/4	6/9	8/-

## MEASURED RATES—Continued

## PLUMBER

EXTERNAL—		Soakers		Flats		Flashings	
4lb Milled Sheet lead per cwt		182/-		217/-		226/-	
LEAD PIPES: running joints,		etc.					
Per foot run		1in	1in	1in	1in	1in	2in
Main	Fixed	5/1	7/5	10/1	12/11	16/6	22/4
Service	with	4/8	6/6	8/5	10/5	13/2	17/10
Waste	hooks	3/2	4/5	5/9	7/-	9/3	11/8
Bends	each	—	—	—	1/9	3/-	8/-
Solder joints	—	8/2	10/-	11/11	13/8	16/-	21/-
Union and joints	—	12/10	16/5	18/6	24/6	—	—
Stop valve and ditto	—	28/11	37/7	51/10	80/9	—	—
Bib valve and ditto	—	20/8	28/-	—	—	—	—
Ball valve and ditto	—	22/6	31/7	49/5	71/11	—	—
Sleeve and ditto	—	—	—	—	21/3	28/9	—

## COPPER TUBES

	1in	1in	1in	1in	1in	2in
Tubes per foot run	2/9	3/6	4/10	5/11	7/-	10/2
Couplings: straight	—	—	—	—	—	—
each	3/3	4/2	6/2	8/-	10/3	13/10
Do. Bends each	6/6	7/10	11/-	15/-	22/4	30/10
Do. Tees each	7/8	8/11	12/11	17/10	24/-	33/8
Do. Cisterns each	4/4	5/9	7/6	9/8	13/4	17/6
Stop cocks each	24/4	35/4	63/-	104/6	159/-	240/-

## BLACK TUBING (Class C)

	1in	1in	1in	1in	1in	2in
fixed with pipe brackets	—	—	—	—	—	—
Tubes, per foot run	1/9	2/1	2/7	3/3	3/10	5/1
Bends and fix, each	3/10	4/7	5/7	7/3	8/2	12/8
Tees and ditto	4/-	4/9	5/9	7/5	9/-	13/4
Fire bends	1/5	1/9	1/10	2/1	2/9	4/10

	2in	4in
Coated iron (M) weight L.C.C. soil and waste fixed with nails and distance	—	—
pieces and molten lead joints	5/2	7/5
Extra only for bends and joint	14/2	22/8
Do. junctions and joints	15/8	28/4
Do. cleaning doors	15/-	16/4
Domical wire guards	2/6	2/9

## PLASTERER—

	yard super
Lime and hair	6/4
Do.	8/-
Sirapite	3/10
Do.	7/8
Do.	9/6
Portland	4/4
Do.	7/8
Do.	4/8
Keenes	5/-
Dubbing	2/2
Metal Lathing	6/2

6" x 6" x 1" Earthenware Plain Glazed Tiles, in fair quantity, white, and setting (on prepared screed) 40/-

Rounded edge. Extra over last 4d. per foot run

Cutting and fitting. Around pipes or clips 1/- ditto

Narrow widths. 3" to 6" wide. Add 75% to plain surface.

Ditto. 6" to 12" ditto. Add 40% to plain surface.

Sundry labours per foot lineal:—

Quirk 2½d. Arris 3½d. Fair edge 2½d. Rounded edge 4d.

Flush bead 1/6.

Mouldings—5d. per inch girth.

Jointing new plastering to old 3d.

## POLISHING

	Foot super	Foot run
NEW WORK—	—	—
Staining, bodying-in and French Polish	2/8	1/8
Staining and wax polishing on hardwood	1/2	9d.
OLD WORK—	—	—
Cleaning down old work and repolish	1/1	—
Stripping, preparing and repolishing	2/11	2/-

## INTERNAL PAINTING

With white lead base in common colours, with brushes.

	Knot stop and prime	Prime and paint once	Prime and paint twice	Add for each extra coat
ON WOOD —	—	—	—	—
General surfaces	2/4	4/9	6/11	1/11

	3½d.	7d.	9½d.	2½d.	Yard run
Running lengths not exceeding 3" wide	3½d.	7d.	9½d.	2½d.	do.
Do. 3" to 6" wide	5d.	9½d.	1/2	4d.	do.
Do. 6" to 9" wide	7½d.	1/2½	1/10	6½d.	do.
Do. 9" to 12" wide	9½d.	1/6½	2/3½	7½d.	do.
Sash square each side	4/5	8/9	13/-	3/9	per doz.
Do. in large squares	6/-	12/3	18/-	5/3	do.
Opening edges	7d.	1/2	1/9	7d.	each

	4½d.	8½d.	1/-	3d.	Yard run
Casement frames	4½d.	8½d.	1/-	3d.	do.
each side	—	—	—	—	—
Mullions or transoms, do	6½d.	11½d.	1/3	4½d.	do.

## ON PLASTER—

	One coat	Two coats	Three coats	Per Yard super
Paint on surfaces	2/9	5/2	7/-	do.

	3/2	5/9	7/8	do.
Do. on mouldings	3/2	5/9	7/8	do.
Do. on enrichment	4/11	9/1	11/10	do.

## ON STEEL—

	2/1	4/-	5/8	do.
Paint on structural steel	2/1	4/-	5/8	do.
Do. on roof trusses	3/6	6/10	9/4	do.

	3/3	5/6	7/9	do.
Do. on metal windows measured over all on both sides, divided into squares	3/3	5/6	7/9	do.

	2/9	4/9	6/3	do.
Do. divided into large squares	2/9	4/9	6/3	do.

	2/4	3/11	5/3	do.
Do. divided into extra large squares	2/4	3/11	5/3	do.

	10d.	1/6	2/-	each
Do. on opening edges	10d.	1/6	2/-	each
Do. on rain water pipe	10d.	1/7	2/1	Yard run

	1/3	2/8	3/7	do.
Do. on do. gutter	1/3	2/8	3/7	do.
Do. on small pipe	3d.	6d.	10d.	do.

## GLAZING (to New Work)

Polished Plate Glass ordinary substance (about 1in), glazing quality, in the following sizes, glazed complete—Per foot super

	5/5½	6/3½	7/4
In plates not exceeding 2 feet super in each	5/5½	6/3½	7/4
Do.	5	do.	do.

Do. (unless extra sizes) 45 feet	do.	7/1
Do. (unless extra sizes) 100 feet	do.	7/4

Add extra price for glazing with screw beads or clips 5d. per foot super.

Do. if glazing bedded in washleather or velvet 9d. per foot run

## SHEET GLASS, glazed, complete, per foot super, in new work:

Ordinary quality clear, glazed to wood with putty:—

	1/2½	1/5½	1/9
24 oz as described	1/2½	1/5½	1/9
26oz do.	—	—	—
32 oz do.	—	—	—

½ figured rolled and Cathedral, glazed to wood with putty

	Per foot super	1/4½	2/0½	1/11
Do. in standard tints	Per foot super	1/4½	2/0½	1/11
No. 4 Fluted, glazed do.	do.	do.	do.	do.

	do.	do.	do.	do.
1in Reeded (narrow, board, etc.) do.	do.	do.	do.	do.
Reedlyte do.	do.	do.	do.	do.

	do.	do.	do.	do.
Spotlyte do.	do.	do.	do.	do.
1in Rough cast do.	do.	do.	do.	do.

	do.	do.	do.	do.
1in Do. wired do.	do.	do.	do.	do.
1in Georgian Rough Cast do.	do.	do.	do.	do.

Add for glazing all as before but to steel to similar work as above, 1½d. per superficial foot.

## PAINTER AND DECORATOR

DISTEMPERING—In common colours, put on with brushes—ON PREPARED SURFACE.

	1 coat	2 coats	Add if required for Sealing coat	Stipp-ling
per yard super—	1 coat	2 coats	Add if required for Sealing coat	Stipp-ling

	(finish)	(under-coat and finish)	6d.	3d.
Ordinary distemper on flat surface of plaster	(finish)	(under-coat and finish)	6d.	3d.
Washable do. on do. of plaster	8½d.	1/4	6d.	3d.

	11½d.	1/9	6d.	3d.
Add if in margins, narrow widths or panels	11½d.	1/9	6d.	3d.
Add if on mouldings	30%	30%	20%	50%

	50%	50%	45%	—
Add if on enrichments	50%	50%	45%	—
Add if on enrichments	160%	160%	115%	—

	Per Piece—Lining	Pattern
On walls	Per Piece—Lining	Pattern
On stairs	6/10	8/2
On ceilings	9/4	10/10

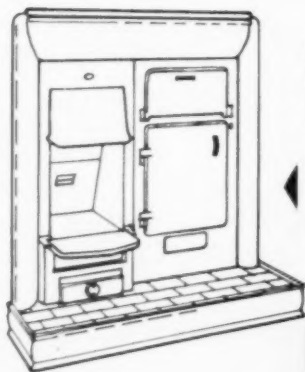
	8/2	9/7
On ceilings	8/2	9/7

## PAPERHANGING

	Per Piece—Lining	Pattern
Hanging only—	Per Piece—Lining	Pattern
On walls	6/10	8/2
On stairs	9/4	10/10
On ceilings	8/2	9/7



**Specify the No. 91 ALICO  
for hot water, good cooking,  
warm room, low cost!**



The Alico does an outstandingly fine job for very little fuel. It's ideal for the new low-cost house—and for improvements and conversions.

◀ **this is the modern,  
low cost answer...**

**... to the  
old inefficient  
living-room range**



*Photograph taken from  
"The Storkton Test" improvement scheme*

For further details of the No. 91 Alico Combination Grate write to the Housing Division of:—

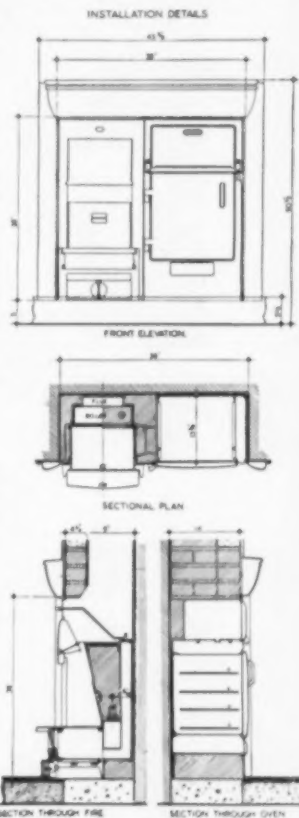
## Why do Housing Authorities, Architects and Tenants praise the ALICO?

Housing authorities are more than happy with this three-services-in-one fire, which heats the water, does the cooking (a lot of water and a lot of cooking) and is a cheerful open fire at the same time. They find it ideal for large families living in a comparatively restricted space.

Architects who have specified the Alico are as delighted with the low installation costs as they are with the smooth contemporary lines.

Speed of installation saves money. The grate is despatched in two units for quick and accurate assembly on the site. This of course saves labour costs—and a lot of worry too.

Tenants like the Alico for many reasons. It isn't choosy about fuel and burns very little. It provides cooking and water-heating facilities for households up to 8 people, stays in all night, and warms the living room at the same time. And it does all this at a very low cost and for scarcely any trouble on the part of the tenant.



### Space Heating

**Capacity:** Full heating up to 1,500 cu. ft.

### Hot Water

**System:** Recommended size of cylinder, 30 gallons (direct or indirect)

*There is a wide choice of colour—and the Alico can be supplied with a right or left hand oven.*

**ALLIED IRONFOUNDERS LTD**

Makers of cookers, boilers, fires and baths

28 Brook Street, London, W.1.



where **CLEANLINESS** counts . . .



*the trend  
is to  
Fuel Oil*

In the bakery, confectionery, catering and food processing industries, where rigid standards of hygiene must be considered, the trend is toward oil firing for all heating applications.

The high burning efficiency and unique cleanliness of fuel oil virtually eliminate contaminating smoke and grit emission. Ash disposal and stoking costs are also eliminated—and the flexibility of oil firing makes it possible to control quickly and accurately heating through all temperature variations.

Esso Fuel Oil delivered to your premises from distribution points located throughout the country may well be the answer to your heating problem.

Esso provide a country-wide technical advisory service.



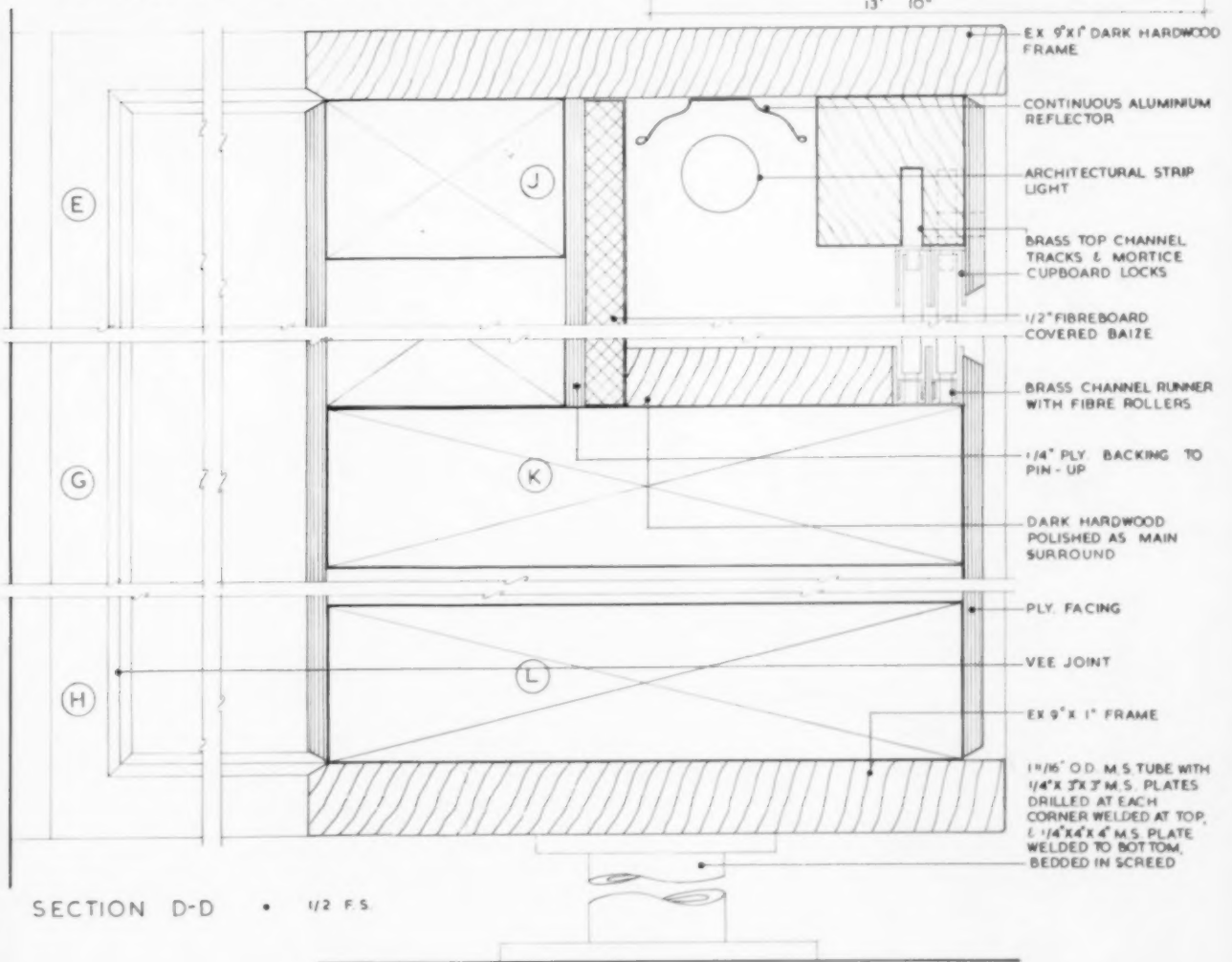
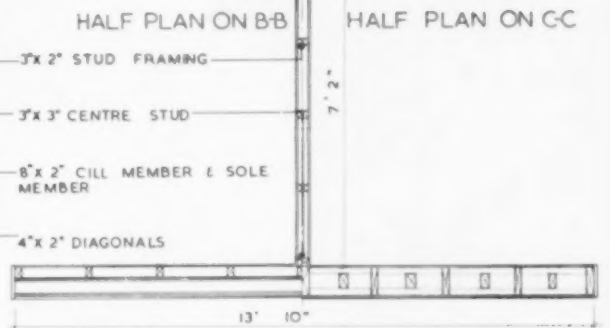
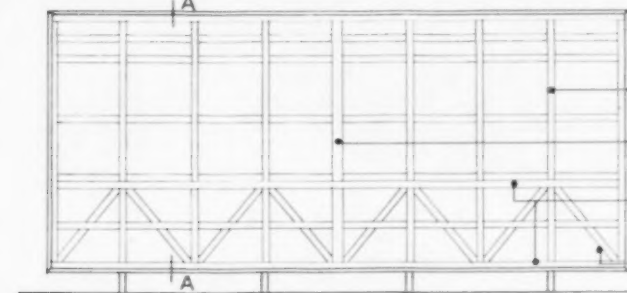
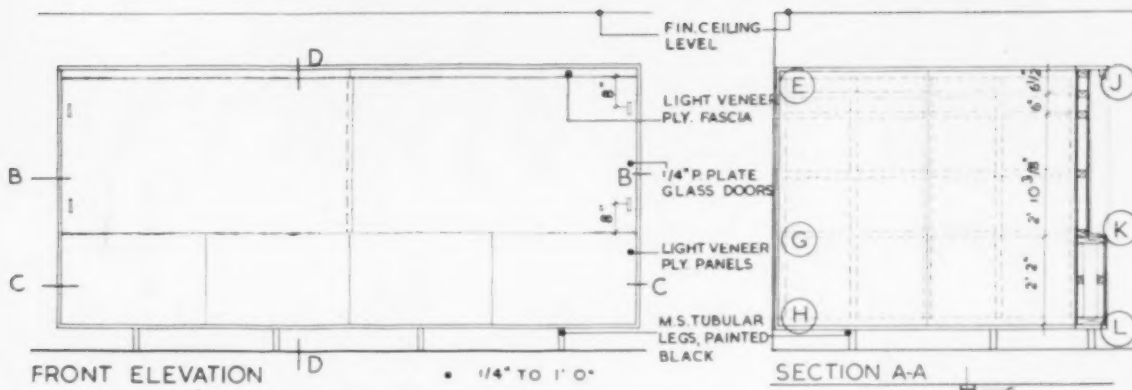
*It pays to say*

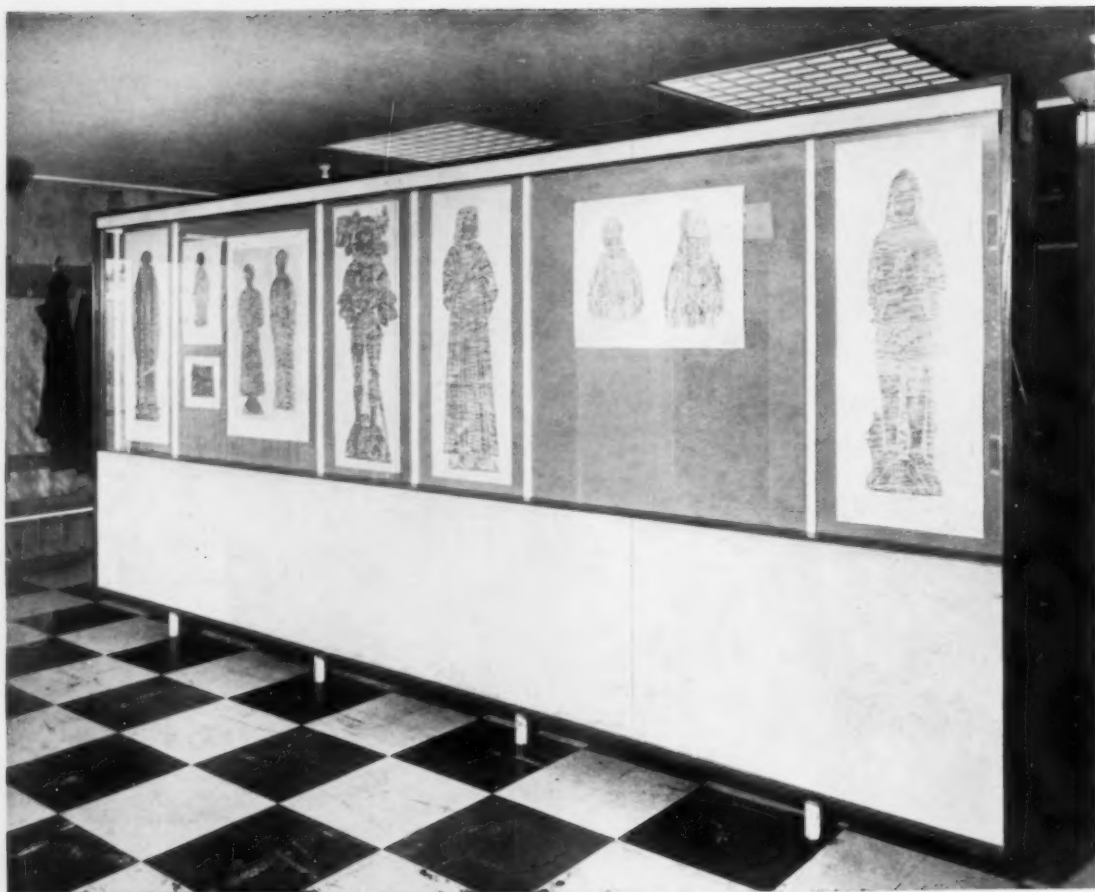


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Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the

## CONTRACT • NEWS •

### OPEN

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**ALFORD U.C.** (a) Erection of 6 houses and 10 bungalows at Christopher Road. (b) H. E. Nicolls, The Hall, Roman Bank, Skegness. (c) 2 gns. (e) November 29.

**ARNOLD U.C.** (a) Erection of 6 shops and 6 maisonnettes in one block at Oxclose estate. (b) Messrs. John Dudding and Partners, 30 Clarendon Street, Nottingham. (c) 2 gns. (d) November 7.

**ATHERSTONE R.C.** (a) Erection of 8 bungalows at Church Walk estate, Mancetter, and 16 bungalows at Atherstone North site. (b) H. N. Jepson, Midland Bank Chambers, Nuneaton. (c) 2 gns. (e) November 18.

**BEESTON AND STAPLEFORD U.C.** (a) Contract No. 102—erection of 30 houses and 8 cottage flats at Inham Nook estate, Chilwell. (b) Council's Surveyor, Town Hall. (d) As soon as possible.

**BIDEFORD B.C.** (a) Erection of two houses at Brickfields. (b) Borough Surveyor, Municipal Buildings. (c) 2 gns. (e) November 17.

**BRADFORD C.C.** (a) Erection of one pair of houses with shops attached at Eccleshill south, two pairs of houses with shops attached at Eccleshill north, two single houses with shop attached at Delf Hill, and two single houses with shop attached at Bierley. (b) City Engineer, Town Hall. (c) 2 gns. (e) November 14.

**BRIGHTON B.C.** (a) Erection of 17 flats and 17 maisonnettes in three blocks at Essex Street. (b) Borough Engineer, 26-30 King's Road. (c) 2 gns. (e) November 29.

**CARDIFF C.C.** (a) Erection of (Group 14) 26 dwellings, comprising houses and bungalows, (Group 25) 41 houses, and (Group 26) 6 bungalows, at Llanrumney. (b) City Surveyor, City Hall. (c) 2 gns. (e) November 21.

**CARDIFF C.C.** (a) Erection of (Group 1) 4 houses at Whitebarn Road, Llanishen, (Group 2) 3 houses at Blue House Road, Llanishen, (Group 3) 2 houses at Keyston Road, Fairwater, and (Group 4) 2 houses at Waterhall Road, Fairwater. (b) City Surveyor, City Hall. (c) 2 gns. (e) November 21.

**CHATHAM B.C.** (a) Erection of 80 houses forming part of the Weeds Wood estate and 22 houses at Roosevelt Avenue on the Wayfield estate. (b) Borough Engineer, Town Hall, in writing, together with a statement of recent contracts or work of a similar nature carried out. (c) 2 gns. (e) November 22.

**CLITHEROE CORPORATION** (a) Erection of 12 old people's bungalows on Standen Road site. (b) Borough Engineer, Church Street. (c) £2. (e) November 11.

**COWES U.C.** (a) Erection of two blocks of six flats and six bungalows at Crossways Road, East Cowes. (b) Council's Engineer, Northwood House. (c) 2 gns. (e) December 3.

address it is the same as the locality given in the heading. (c) deposit, (d) last date of application. (e) last date and time for submission of tenders. Full details of contracts marked \* are given in the advertisement section.

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**DARLASTON U.C.** (a) Erection of two shops with living accommodation at Catherines Cross. (b) Council's Clerk, Town Hall. (c) 2gns. (d) November 7.

**DEVON.** (a) Erection of a farmhouse and additions to buildings at Westcott, Burlescombe. (b) County Land Agent, The Castle, Exeter.

**DURHAM C.C.** (a) Erection of additional classroom at St. Helen's Auckland junior school. (b) County Architect, South Street. (d) November 12.

**EAST SUSSEX C.C.** (a) Completion of Burgess Hill, Oakmeads secondary school, phase II. (b) County Architect, County Hall, Lewes. (d) November 17.

**EAST SUSSEX C.C.** (a) Completion of Crowborough secondary school, phases II and III. (b) County Architect, County Hall, Lewes. (d) November 17.

**EAST SUSSEX C.C.** (a) Erection of Haywards Heath grammar technical school. (b) County Architect, County Hall, Lewes. (d) November 14.

**EIRE — DROGHEDA CORPORATION.** (a) Erection of 88 houses at Platten Road, section 3. (b) Town Clerk, Court House, Drogheda. (c) 5gns. (e) November 16.

**ESSEX C.C.** (a) Erection of additional classrooms at Grays Palmers endowed school for girls. Approx. cost £2,500. (b) County Architect, County Hall, Chelmsford. (d) November 5.

**ESSEX C.C.** (a) Erection of (1) Basildon Woodlands secondary school and (2) Brentwood south secondary school. Approx. cost (1) £185,000 and (2) £140,000. (b) County Architect, County Hall, Chelmsford. (d) November 5.

**ESSEX C.C.** (a) Erection of additional classroom and hatted practical room at Newport grammar school. Approx. cost £8,250. (b) County Architect, County Hall, Chelmsford. (d) November 5.

**HAMBLETON R.C.** (a) Erection of 12 bungalows at Hartsgrove, Chiddingfold. (b) Council's Engineer, Council Offices, Bury Fields, Guildford. (c) 3gns. (e) November 16.

**HAMPSHIRE C.C.** (a) Erection of secondary schools at Whitehill Bordon, Petersfield and Romsey, and junior schools at Fareham Park, Havant Front Lawn and Fawley Blackfield. (b) County Architect, The Castle, Winchester. (d) November 11.

**HORNSEA U.C.** (a) Erection of a pair of old people's dwellings at Mereside. (b) Council's Surveyor, Town Hall, Hornsea, Yorkshire. (e) November 16.

**HUNTINGDON C.C.** (a) Erection of 3 bungalows at New Fen Farm, Ramsey St. Mary. (b) County Land Agent, Walden House. (c) Ign. (e) November 25.

**LANCASHIRE C.C.** (a) (1) Erection of extensions to workshop at Newton le Willows technical college, (2) adaptations at Ashton-in-Makerfield grammar school, (3) erection of boiler house at Rainford central kitchen, (4) erection of scullery and store at Crosby Waterloo Park school for girls, (5) adaptations for catering department at Lancaster and Morecambe technical college, (6) extensions to classrooms at Hawkshead County school and (7) erection of prefabricated classroom and adaptations to form laboratory at Heywood grammar school. (b) County Architect, P.O. Box No. 26, County Hall, Preston, quoting ref. A/5550. (d) November 8.

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**LANCASHIRE C.C.** (a) (1) Adaptations at Turton infants' school, (2) erection of two classrooms at Irlam county school. (b) County Architect, P.O. Box No. 26, County Hall, Preston, quoting ref. A/5550. (d) November 8.

**LONDON—FINCHLEY B.C.** (a) Erection of a cleansing and disinfecting station at the Mortuary site, North Circular Road, N.3. (b) P. M. Spencer, 294-296 Regents Park Road, Finchley, N.3. (c) £2. (e) November 21.

**LONDON — GREENWICH B.C.** (a) Erection of 12 houses in six pairs, on the Merriman Road site. (b) Borough Engineer, Town Hall, Greenwich High Road, S.E.10, together with particulars of recent work executed. (d) November 5.

**LUTON B.C.** (a) Erection of an extension to the Luton War Memorial. (b) Town Clerk, Town Hall, or Austin Blomfield, 1 New Court, Temple, E.C.4. (c) 3gns. (e) November 21.

**MAESTEG U.C.** (a) Erection of 40 houses at Parc estate. (b) Council's Engineer, Council Offices, Talbot Street. (c) 3gns. (e) November 19.

**NESTON U.C.** (a) Erection of 1 block of 5 and 1 block of 7 garages at Willaston estate, 3 blocks of 4 garages at Mellock Lane estate, and 1 block of 6 garages at Liverpool Road, Raby Road estate. (b) Council's Engineer, Town Hall. (c) Ign. (e) November 12.

**N. IRELAND—CASTLEREAGH R.C.** (a) Erection of 62 houses and 24 garages together with ancillary works on a site off the Cregagh Road. (b) Council's Clerk, Council Office, 5 Lisburn Road, Belfast. (c) 5gns. (e) November 11.

**NOTTINGHAM C.C.** (a) Erection of an ambulance station in Beechdale Road. (b) City Engineer, The Guildhall. (c) £2. (e) November 21.

**NUNEATON B.C.** (a) Carrying out the conversion of Oaston Road Chapel into a crematorium. (b) Borough Surveyor, Council House. (d) As soon as possible.

**PORTSMOUTH C.C.** (a) Erection of (1) kiosks at South Parade, (2) 76 flats and maisonnettes at King Street, and (3) 108 houses at West Leigh site No. 4. (b) City Architect, 1 Western Parade. (c) Ign. (d) November 11.

**ROCHDALE B.C.** (a) Carrying out alterations and additions at the Technical school, Nelson Street. (b) Borough Surveyor, Town Hall. (e) November 28.

**SCOTLAND—INVERNESS C.C.** (a) Carrying out proposed extension of the primary school at Dalneigh. (b) Mr. James Shankley, 2 Ness Walk, in writing. (d) November 7.

**SHEFFIELD C.C.** (a) Erection of 250 garages at Greenhill-Bradway estate. (b) City Architect, Town Hall. (c) £2. (e) November 11.

## PLACED

*Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.*

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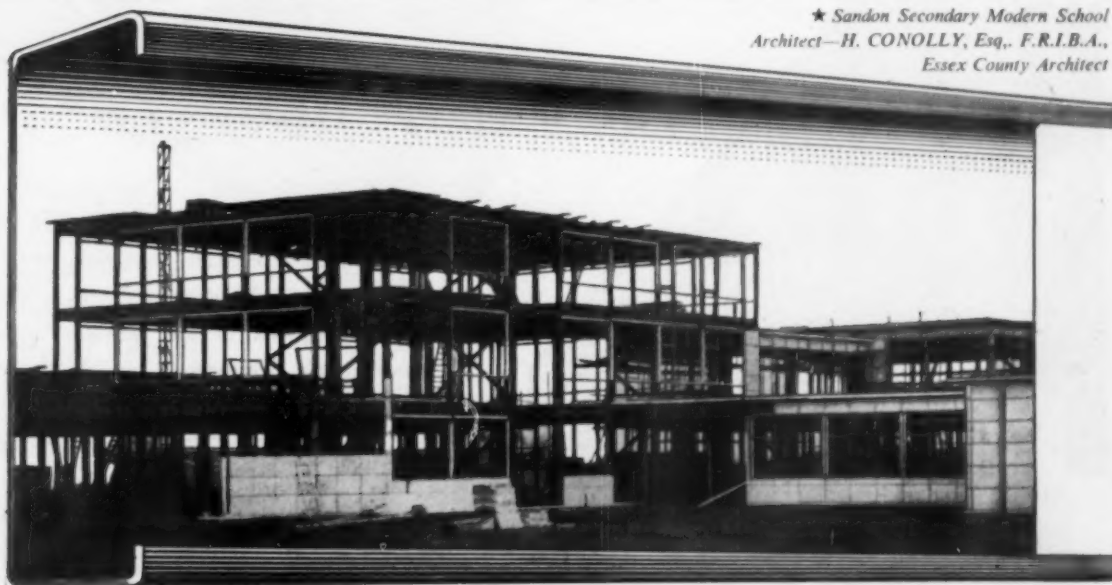
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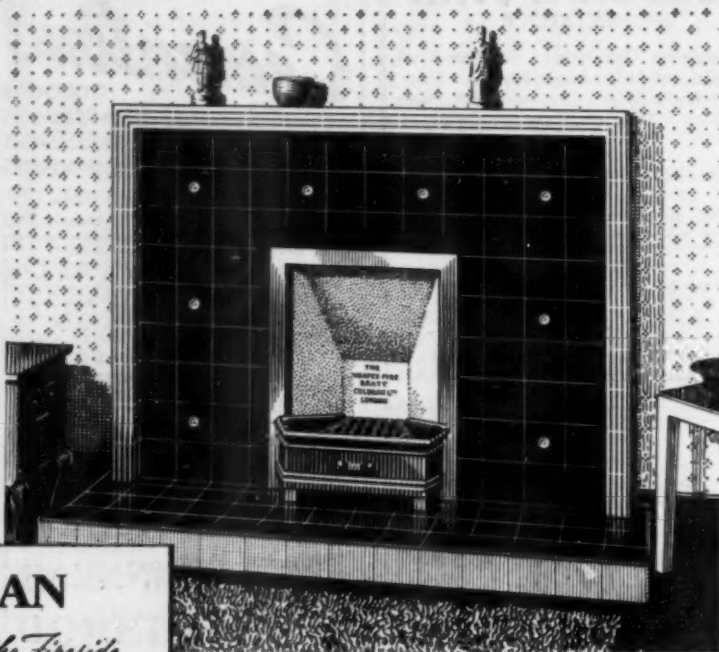
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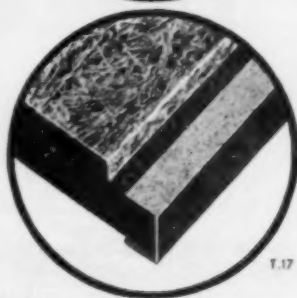


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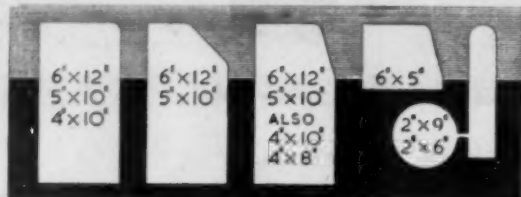
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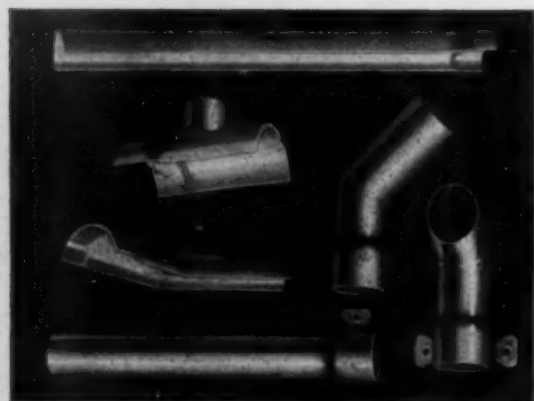
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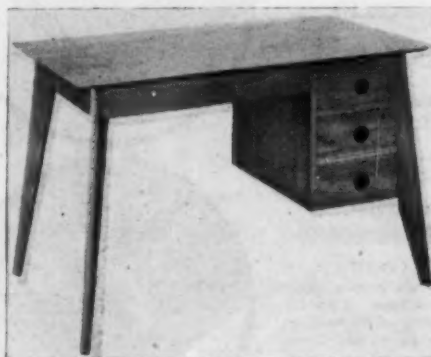


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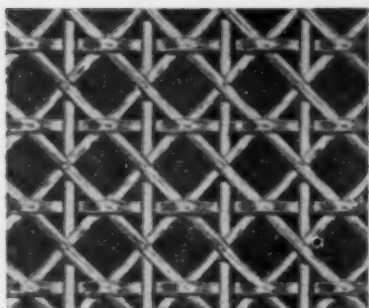
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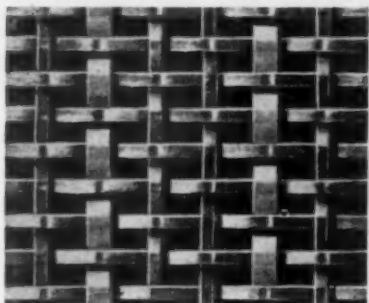


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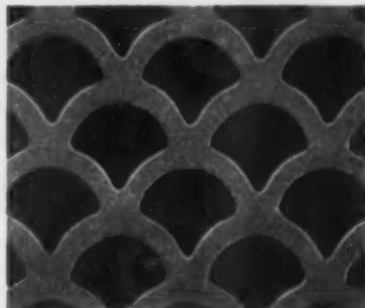
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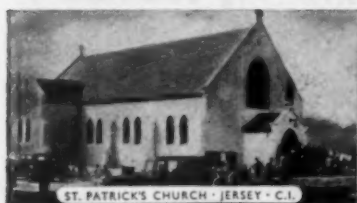
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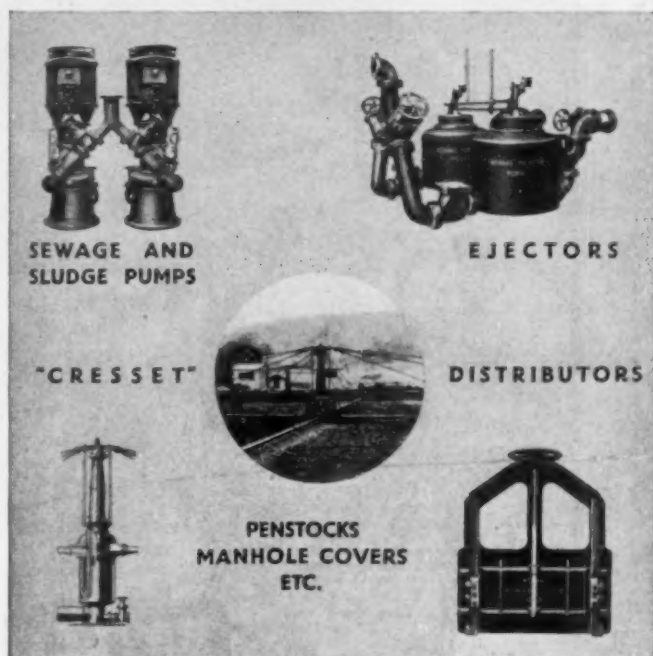
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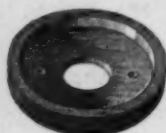
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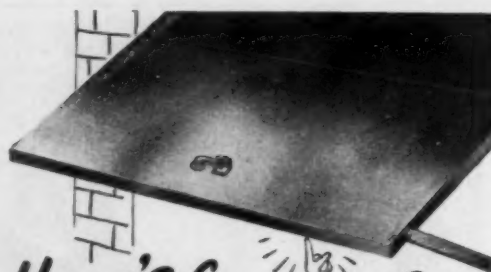
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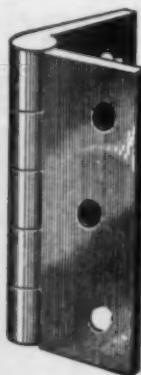
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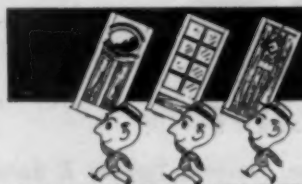
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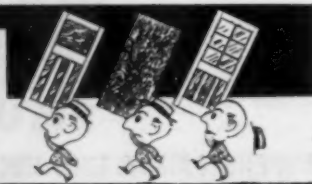
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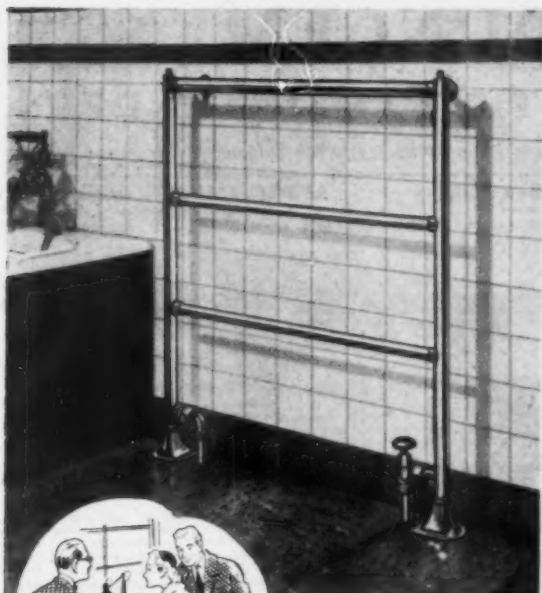


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### APPOINTMENTS

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is exempted from the provisions of The Notification of Vacancies Order, 1952.

#### BOROUGH OF MITCHAM

##### APPOINTMENT OF ARCHITECTURAL ASSISTANT

APPLICATIONS are invited for the above appointment in the Borough Engineer and Surveyor's Department to A.P.T. Grade II of the National Scale of Salaries (£560 x 4/20 to £640 per annum) plus London "weighting".

Further particulars may be obtained from the Borough Engineer and Surveyor, Town Hall, Mitcham, to whom applications must be forwarded endorsed "Architectural Assistant" by first post on November 17th, 1955.

R. H. WHITE,  
Town Clerk.

Town Hall,  
Mitcham, Surrey.  
October 27th, 1955.

[1675]

#### LONDON COUNTY COUNCIL

**BRIXTON SCHOOL OF BUILDING**, as soon as possible, Assistant Grade B for Building Construction and Supervise Studio Work in courses in Architecture and Surveying. Should be Fellow or Associate of R.I.B.A. or R.I.C.S. with good professional experience. Teaching experience an advantage. Burnham F.E. salary scale £525 x £25 — £934 plus London Allowance of £36 or £48. Individual minimum and maximum commencing salary according to age, qualifications and experience. Application forms from Secretary at School, Fendale Road, S.W.4., returnable by November 19, 1955.

[1694]

#### COUNTY BOROUGH OF EAST HAM

QUANTITY SURVEYOR — Grade II £560 — £640

LONDON weighting is paid in addition. Salary in excess of the minimum may be paid according to qualifications and experience.

A subsistence allowance may be granted over a reasonable period to the person appointed if unable to obtain suitable housing accommodation, necessitating the maintenance of two homes.

Further details and application forms, returnable by November 18, 1955, from the Town Clerk, Town Hall, East Ham, E.6.

[1698]

#### BOROUGH OF OLDURY

##### BOROUGH SURVEYOR'S DEPARTMENT ARCHITECTS' SECTION

APPLICATIONS are invited for the appointment of an Architectural Assistant, Grade A.P.T. III (£660 — £725), in the Borough Surveyor's Department. Applicants for the appointment should be good architectural draughtsmen, with experience in the preparation of working drawings and details from preliminary sketches and should have good experience of housing and education work normally undertaken by Local Authorities and capable of administering small building contracts.

The appointment will be supernumerary, subject to the National Conditions of Service and to the selected candidate passing a medical examination. Housing accommodation will be available to married applicants if this is required.

Applications, giving particulars of age, qualifications and experience and the names of two referees, should be delivered to the undersigned not later than Saturday, November 12, 1955.

KENNETH PEARCE,  
Town Clerk.

Municipal Buildings,  
OLDURY,  
Birmingham.  
October 27, 1955.

[1704]

MINISTRY OF WORKS require ARCHITECTURAL ASSISTANTS for drawing offices in London, Edinburgh and various provincial offices, with at least 3 years' training, experience in an architect's office and of Inter R.I.B.A. standard. London salary £463 to £725 p.a. elsewhere slightly less. Starting pay according to age and experience, prospects of promotion and permanency. State age, details of training and experience, to Chief Architect, Ministry of Works, A. 27 (G), Abell House, John Islip Street, London, S.W.1.

[1618]

### APPOINTMENTS—contd.

#### PADDINGTON BOROUGH COUNCIL

THE following vacancies occur in the Department under the control of the Director of Housing and Borough Architect in which there is at present, and contemplated, an interesting programme of civic building and housing schemes. Suitably qualified and experienced applicants are required with a knowledge and enthusiasm for the best contemporary work. Commencing salaries within scales will depend on qualifications and experience.

1. SENIOR ASSISTANT ARCHITECT (A.P.T. VI — £855 to £1,030 p.a.). Applicants must be A.R.I.B.A., with practical experience of building work and a personality likely to obtain results with other staff. They should also have experience in the design and supervision of housing schemes, including multi-storey flats, and be acquainted with local government procedure. Some experience in town planning would also be an advantage. (Quote A.246).

2. ASSISTANT ARCHITECT (A.P.T. V — £780 to £930 p.a.). A.R.I.B.A. candidates preferred with some experience also in design and supervision of building works of some magnitude and a knowledge of local authority requirements (Quote A.247).

3. ARCHITECTURAL ASSISTANT (A.P.T. III — £630 to £755 p.a.). Applicants should be Inter R.I.B.A. and be capable of preparing working and detail drawings and sketch drawings on smaller schemes. Should also be quick and competent draughtsmen, with an adequate knowledge of building bylaws, housing manual standards and modern construction techniques (Quote A.248).

4. QUANTITY SURVEYOR'S ASSISTANT (A.P.T. II — £590 to £670 p.a.). Candidates should have experience in preparation of estimates, working up, abstracting, billing, the measurement and working up to final account stage. Preference to candidates being holders of, or at standard of, Inter R.I.C.S. (Quantities Sub-division) (Quote A.249).

5. BUILDING SURVEYING ASSISTANT (A.P.T. II — £590 to £670 p.a.). Candidates should have practical knowledge of building construction, experience in surveying and levelling, the repair, adaptation and conversion of civil and residential properties, and be capable of preparing plans, specifications and estimates of costs in respect of those works and their supervision. Candidates preferred at advanced stage of preparation for R.I.C.S. Intermediate or equivalent examination (Quote A.250).

Applications in writing to the undersigned by November 16, 1955.

W. H. BENTLEY,  
Town Clerk.

Town Hall,  
Paddington Green, W.2.

[1701]

#### EDINBURGH COLLEGE OF ART

APPLICATIONS are invited for the post of Senior Assistant in the School of Architecture, salary scale £940 x £50 x £1,190 per annum placing according to qualifications and experience.

Applications are also invited for the post of Assistant Instructor in the School of Architecture, salary scale £690 x £30 x £990 per annum; placing according to qualifications and experience.

Forms of application and conditions of appointment may be obtained from the Secretary, Edinburgh College of Art, Lauriston Place, Edinburgh, 3, and should be returned to him not later than November 19, 1955.

J. R. BROWN,  
Secretary.  
[1703]

#### CITY OF SHEFFIELD EDUCATION COMMITTEE

##### COLLEGE OF COMMERCE AND TECHNOLOGY

APPLICATIONS are invited for the full-time post of LECTURER in Building Construction and Allied Subjects in the DEPARTMENT OF BUILDING. Candidates should be members of the Royal Institute of British Architects or other Professional Institution, with practical experience.

Salary in accordance with the Burnham Technical Scale for Lecturers: £965 x £25 — £1,065.

Application Forms, obtainable from the undersigned (stamped, addressed envelope), should be returned as soon as possible after the appearance of this advertisement.

STANLEY MOFFETT,  
Director of Education.

Education Office,  
P.O. Box 67,  
Leopold Street,  
Sheffield, 1.

[1708]

### APPOINTMENTS—contd.

#### COLLEGE OF TECHNOLOGY, BIRMINGHAM

##### DEPARTMENT OF BUILDING AND CIVIL ENGINEERING

APPLICATIONS are invited for appointment as full-time LECTURER in STRUCTURAL ENGINEERING and associated subjects.

Candidates should hold one or other of the following qualifications:—

- (a) B.Sc. (Eng.) with structural engineering subjects.
- (b) A.M.I. Struct. E.
- (c) A.M.I.C.E.

Industrial experience is essential and ability to teach structural engineering with an architectural bias will be advantageous.

The successful candidate will be required to take up the appointment as soon as possible. Salary will be in accordance with the Burnham (Further Education) Scale for Lecturers (Men) £965 x £25 to £1,065.

Further particulars and form of application may be obtained from the Registrar, College of Technology, Suffolk Street, Birmingham 1, on receipt of a stamped addressed foolscap envelope. Completed forms should be returned to him not later than two weeks after the appearance of this advertisement.

K. R. FILLING,  
Clerk to the Governing Body.  
[1702]

#### KENT COUNTY COUNCIL

ARCHITECTS interested in progressive design and construction are required for work on the Council's large and varied Building Programme of Technical, Secondary and Primary Schools and other Public Buildings. The office is organised on a group basis and Architects are encouraged to exercise as much individual responsibility and initiative as possible.

Candidates must be Associates of the R.I.B.A. Salaries within scales £750-£900 and £675-£825. N.J.C. conditions of service. Details and application forms from the County Architect, Springfield, Maidstone, Kent. Closing date 22nd November, 1955.

[1707]

#### COUNTY BOROUGH OF GREAT YARMOUTH

##### APPOINTMENT OF SENIOR ASSISTANT ARCHITECT

APPLICATIONS are invited for the above appointment in the Borough Engineer's Department at a salary within A.P.T. Grade V (£750-£900). Applicants must be A.R.I.B.A. with wide experience in the design and administration of large contracts for specialised buildings carried out by a Local Authority. Preference will be given to applicants having experience in new library buildings. HOUSING ACCOMMODATION WILL BE MADE AVAILABLE.

Applications, in an envelope endorsed "Senior Assistant Architect", giving names and addresses of two referees and stating age, professional training, qualifications, experience and present and previous appointments with salaries, must reach me not later than 12 noon, 19th November, 1955.

FARRA CONWAY,  
Town Clerk.

Town Hall,  
Great Yarmouth.  
27th October, 1955.

[1706]

ASSISTANT Quantity Surveyor required for Property Department of Lanark County Council at Motherwell. J.I.C. salary scale A.P.T. Grade VIII (£840/£915). Must have passed Final Examination of R.I.C.S. and have had practical experience in the preparation of estimates and Schedules of Quantities, measuring up and checking of final accounts of all trades.

Supernumerary. Medical examination. No canvassing. Applications stating age, qualifications and experience, together with names and addresses of three referees to be lodged with the County Clerk, P.O. Box No. 1, Glasgow, not later than 12th November, 1955.

[1688]

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## ARCHITECTURAL APPOINTMENTS VACANT

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc. If the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is exempted from the provisions of The Notification of Vacancies Order, 1952.

**ARCHITECTURAL** Junior Assistant required. Should have two years' experience on large commercial and industrial projects. Salary according to experience.—Box 7107, c/o A. & B.N. [1661]

**ARCHITECTURAL** Assistants required, from 2nd year to Intermediate Standard R.I.B.A. for Housing and Estate work in West End office. Salary £300 to £450 p.a., according to qualifications and experience. Good prospects for advancement.—Apply Mr. Young, Percy Bilton Ltd., 113 Park Street, London, W.1. Tel. Mayfair 8240. [1635]

**ASSISTANT** required in busy practice in West End, in early twenties, about intermediate R.I.B.A. standard; excellent opportunities for gaining all round experience.—Box 385, c/o A. & B.N. [1636]

**COMPETENT** Architectural Assistants, all grades required immediately for Industrial and Housing Projects, in Yorkshire Architect's Office.

Write stating experience, qualification, when available and salary required.

Walker & Collinson, Architects & Surveyors, 12, The Exchange, BRADFORD 1. [1660]

**ARCHITECTS** Co-partnership require unmarried, qualified, experienced assistant in their Lagos office. Maximum four 14 months. Flat provided. Write 44, Charlotte Street, London, W.1., or telephone Langham 5791. [1600]

**ARCHITECT**, Young qualified manager required for practice in Blackpool area. Salary £800 plus expenses. Good prospects.—Write Box 7348, c/o A. & B.N. [1696]

**COUNTRY** office (West Surrey) require Architectural Assistant for general practice. Letter to final standard. Salary required and details of experience to — Box 7349, c/o A. & B.N. [1695]

**ARCHITECTURAL** Assistant about intermediate standard required for busy country practice. Agricultural, domestic and industrial work.—Smith Woolley & Partners, Coltingham, Newark, Notts. [1693]

**DEVEREUX AND DAVIES**, 3 Gower Street, W.C.1, require assistant—inter. to final standard with some practical experience. Vacancy suitable for keen person wanting to work in relatively small office where freedom and a high standard of individual responsibility encouraged. [1699]

**ARCHITECTS'** Co-partnership require qualified assistant with experience.—Write 44, Charlotte Street, London, W.1., or telephone Langham 5791. [1602]

**BUSY** London Office requires 2 Architectural Assistants, approximately intermediate standard or upwards. Also requires one Assistant with considerable perspective experience, particularly able to do quick interior colour sketches. 5-day week, good salaries.—Lewis Solomon, Son & Joseph, 21 Bloomsbury Way, W.C.1., HOL 5108 or 7082. [1604]

**WANTED**. Experienced Architectural Assistant capable of preparing working drawings, specifications and site supervision.—Apply Box 7390, c/o A. & B.N. [1705]

## APPOINTMENTS—contd.

**DESIGN** Draughtsman (Architectural) required by large Petroleum Company for its Estate Department, London. Candidates should have experience in surveys of existing buildings, land survey and should be able to prepare working drawings for structural alterations and layout and equipping of large and small offices. Men aged 25/32. Salary according to age, experience and qualifications. Pension scheme, canteen facilities, social and sports club activities. — Please apply in writing to Box ZA327, Deacon's Advertising, 36, Leadenhall Street, E.C.3. [1700]

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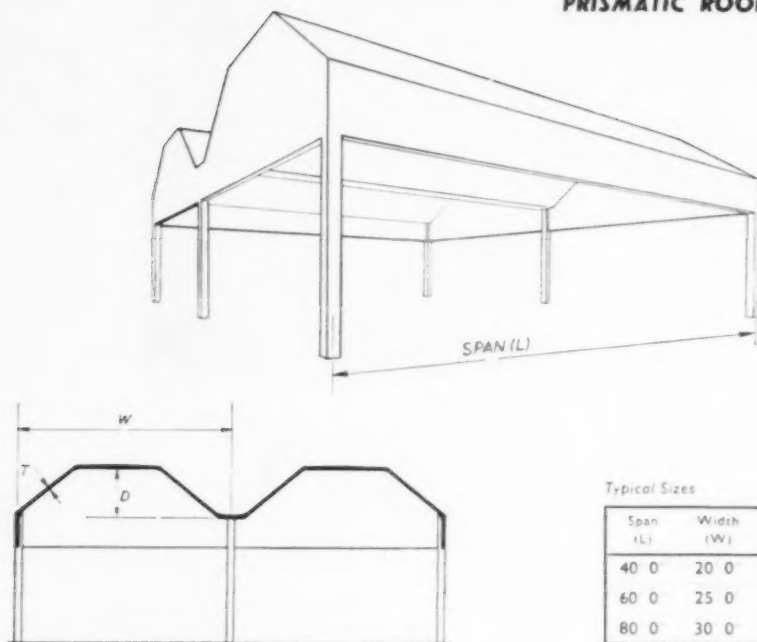
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